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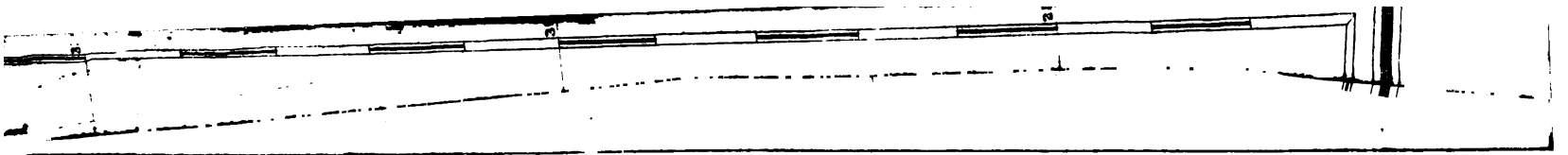

STATISTICAL REPORT

ON THE

SICKNESS AND MORTALITY

IN THE

ARMY OF THE UNITED STATES.

[v. 1]

COMPILED FROM THE RECORDS OF THE SURGEON GENERAL'S AND ADJUTANT GENERAL'S OFFICES—EMBRACING A PERIOD OF TWENTY YEARS, FROM JANUARY, 1819, TO JANUARY, 1839.

PREPARED UNDER THE DIRECTION OF

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SURGEON GENERAL.

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INTRODUCTION.

The following pages are devoted to the investigation of the comparative influence of various systems of climate upon the organization of man—a subject which engaged the attention of the father of physic himself, in his treatise on "Air, Water, and Situation." The medical literature of almost every country abounds with medico-topographical descriptions of particular localities; but the mere accumulation of facts of this kind, unless systematically arranged can avail but little in determining the operation of physical causes upon the human constitution. In observing the phenomena of nature, the view of the individual practitioner is here restricted to narrow boundaries; and as these various and complicated facts have been but partially generalized, the laws of nature in regard to these external influences upon the healthy and diseased condition of man are often sadly misinterpreted.

For the period of twenty years, quarterly reports of diseases among the regular troops have been uninterruptedly made to the Medical Bureau of the United States Army; thus affording the means, in connexion with the returns in the Adjutant General's Office, not only to investigate morbid action by the numerical method, but to show its relation with climate. As these diversified facts admit of classification according to certain geographical limits, the results, it is hoped, will furnish some general laws towards the basis of a system of *medical geography*.

This report consists of a collection of facts in relation to the medical topography of the military posts, and the vital statistics of the troops extending over a period of twenty years. The general conclusions have been arrived at through a process of statistical investigation, and the accompanying remarks are the result of the experience and observation of individuals whose officia duty it was to study the local features of certain regions, to investigate the causes of their diseases, and to analyze and describe them.

The diseases incident to armies present an extensive field for observation. The advantages offered in the Revolutionary war, and in our second struggle with Great Britain, were but slightly improved. Excepting the "Medical Sketches" of Surgeon Mann, and a few remarks interspersed in the works of Dr. Rush, we are almost entirely ignorant of the medical history of these two eventful periods. Military *hygiene*—the knowledge of maintaining the health

of soldiers, and of promoting their efficiency—is another subject which should not only be carefully studied by medical and all other officers, but receive the special attention of Government.

In the arrangement of these statistical materials, the subject has been divided into two parts, each embracing the period of ten years. In the former, the numerical mode of investigation, in default of the requisite data in regard to the mean strength of each post, prior to 1829, is carried out only in part; but in the latter period, all the advantages afforded by this method of analysis has been realized. The extent of labor in preparing these papers may be inferred from the single fact that it was necessary to examine about 4,000 quarterly sick-reports, (a majority of which have been condensed into abstracts,) and to obtain from the Adjutant General's Office the mean strength for corresponding periods, compiled from the post and regimental returns.

In the brief topographical descriptions of the posts, due allowance will be made by those having the personal knowledge derived from a residence at a station, for the difficulty attending a compilation from statements made by different individuals and at different periods. As this report exhibits a condensed view of the labors of the majority of the medical officers belonging to the army for a period of twenty years, it is impracticable to acknowledge the collator's obligation to each one individually. He, therefore, avails himself of this opportunity of expressing to them generally his indebtedness for the valuable data afforded by their quarterly reports. To the late Surgeon General, much credit pertains for having organized a system of returns, rendering it feasible to condense the results of so long a period into the form now presented.

SURGEON GENERAL'S OFFICE, *April*, 1840.

PART I.

In entering upon the annual details, it may be necessary to remark, that in this part it is intended to give merely an outline
1819. of the medical history of each year, descending in no instance to the considerarion of specific cases unless warranted by unusual circumstances. The object aimed at is, to exhibit more especially the peculiar character of the diseases which prevail in wild and newly cultivated countries, and to bring under notice several affections, which, with the exception of the army, are little met with in our country, such as scurvy and the poisonous effects of lead. Military hygiene, or the art of preserving the health of soldiers and of promoting their efficiency under all circumstances, will receive attention. As no attempt will be made to enter deeply into the pathology of disease, censoriousness may possibly be disarmed by stating that no medical officer in making an official report, supposed that it would ever be applied to its present use. To the army Surgeon at least, it is believed that the facts embodied will prove of some value. Nearly all conclusions derived from statistical results have been reserved for the second part.

During the first five years embraced in this report, the features of morbid action in general were characterized by unusual severity. Independently of ordinary observation, this fact, so far as the data extend, is established by numerical results.

The aggregate of cases and deaths presented in the reports of the *first quarter* of this year, is comparatively small, no disease being sufficiently prevalent to require comment. At Forts McHenry and Severn, (Baltimore and Annapolis,) however, "a violent bilious colic," remarks the Surgeon General, "attended with frequent attacks of inflammation of the brain, terminating in delirium, apoplexy, and death, has prevailed for the last year." At Fort Severn no satisfactory cause could be assigned, independently of the local peculiarities of position; whilst at Fort McHenry, the men are represented as excessively addicted to the vice of intemperance. Dr. Stewart, who had resided many years at Baltimore, regarded it as a new modification of disease. It was looked upon as one of those inscrutable results, which, by the fortuitous concurrence of circumstances, are developed from time to time; and, which, in the infinite series of such contingencies, may never again occur. It will be seen, however, that this disease, which continued to harass these two garrisons for several years, finally received a rational explanation.

In the southern division of the army, the usual diseases of our troops, intermittents, diarrhœa, and dysentery, prevailed; but the cases reported were generally of a mild character, and controllable by ordinary remedies.

The reports for the quarter ending the 30th June, exhibit nothing peculiar. Pulmonary consumption and intemperance are as usual the active causes of death among the troops. The deaths from these two causes, as in our bills of mortality, it will be seen, constantly present a heavy item. In this quarter, out of twenty-three deaths, nine are traced directly to an excessive use of ardent spirits, whilst others doubtless were owing indirectly to the same cause. The Surgeon General embraced this occasion to impress upon the Secretary of War the importance of striking the whiskey altogether from the ration, and substituting an equivalent in vegetables or sugar and coffee; but it was not until the administration of Mr. Cass, in 1830, although its necessity was frequently urged, that an order was promulgated directing that "the commissaries shall cease to issue ardent spirits as a part of the daily ration of the soldier."

The total of cases and deaths reported for the quarter ending the 30th September, was unusually large. The principal diseases were fevers of the synochal, intermittent, and remittent type, and diarrhœa and dysentery. Under the first form of fever is included, the typhus which prevailed at the north; and under the last, the bilious remittent or yellow fever, which appeared in many of our cities, on the sea-board, and even as far west as the Missouri. In the southern division, intermittents and remittents, in their common form, were unusually prevalent; and at most places, more especially along the borders of Florida, attended with much hepatic derangement. Dysentery was also presented in a character of more than ordinary severity and fatality. The sick reports of all the military stations from the Atlantic to the Mississippi, showed in general a high ratio of disease, the symptoms were for the most part severe, and the average of fatal cases proportionably high.

Some facts of an interesting and valuable character, in relation to yellow fever, are interspersed through the quarterly reports. It may be regarded as a singular concurrence of opinion, coming, as it does, from individuals so remotely situated and viewing the subject under such various circumstances, that the belief in its contagious nature, has been in no instance avowed. The doctrine that intermittent, remittent, and yellow fever, assume, according to circumstances, more or less the type of one another, seems to be extensively entertained. Believing them to arise from similar causes, variously modified, to assail the system through the same avenues, and to require the same general treatment, these fevers are regarded by this class of reasoners as essentially the same, modified by the intensity of the cause, and peculiarity of constitution. This position is strongly confirmed by the oft observed fact, that the natives of our southern cities, in which yellow fever is endemical, possess, in a great measure, an exemption from this malady; for, whilst intermittents and mild remittents prevail among the old inhabitants, yellow fever often manifests itself so exclusively among those

lately arrived from northern latitudes, that it has received the name of "*Strangers' Fever.*" We are certainly not justified, however, in the present state of our knowledge, to assert that the same miasm, which produces remittent fever, excites, in its more virulent state, yellow fever, or, indeed, that the latter is of paludal origin.

The opinion of the origin of yellow fever, from miasmatic effluvia, seems to be strongly corroborated by the following facts: 1. Yellow fever always appears simultaneously with bilious remittents; 2. a high range of atmospheric temperature is essential to the generation of its cause; 3. its first appearance is always in the lowest and most filthy parts of towns, and in localities favorable to the production of miasmata; and, 4. the supervention of storms, heavy rains, or cold weather, puts an immediate check to its progress. These views are sustained by the most experienced writers on the subject. It is remarked by Dr. Rush, in relation to the yellow fever of Philadelphia, in 1802, that "intermittents, the mild remittent, the inflammatory, bilious, and the malignant yellow fever, have, in many instances, all run into each other." Speaking of the yellow fever of the same city in 1803, Dr. Caldwell observes, "as the fever receded from the low ground, and malignant atmosphere of Water street, it became more and more mild and manageable, till its evanescent shades in Second street were, in many instances, much lighter than the common remittent of the country." In the yellow fever of Charleston in 1804, Dr. Ramsay says, "neglected intermittents frequently terminated in yellow fever." In regard to Baltimore, Dr. Davidge states that "the bilious or remitting fever, in its ordinary form, prevailed in that town, and continued until it was gradually lost in the severer form of yellow fever as the season advanced." That the disease was in none of these epidemics, imparted or communicated by contagion, all these writers unanimously agree.

At New Orleans, the experience of almost every year exemplifies the same fact. Situated on a mighty river's bank, formed of the alluvion of its own current, this emporium may be regarded as a healthy locality during nine months of the year. As the summer temperature increases, yellow fever appears almost with the certainty of the varying seasons, and disappears as regularly when the scale of the thermometer indicates its decrease. Although steamers laden with fugitives from malarious pestilence, ascend the stream by hundreds at this period; yet the disease, notwithstanding the fatal *black vomit* appears on the decks as they pass along, is never manifested among fellow-passengers from uninfected regions; nor is it, under like circumstances, communicated to the inhabitants of the district to which they may fly. It is, therefore, purely a disease of season and locality.

Although we are not quite certain that fevers which have, or are supposed to have, their source in vegetable miasms, or in effluvia from marshes, never subsequently spread by contagion; yet yellow fever, as developed in our northern cities, even when engendered in the holds of ships navigating in hot climates, is known not to have been communicated. A cause of this kind would no doubt fall harmless upon the inhabitants of a salubrious country locality. To develope this ma-

lignant fever, seems to require the conjoint operation of both local and general causes, constituting an endemico-epidemic; and in the summer atmosphere of a crowded city, there appears to exist some peculiar agency favoring this result. In these cases, there is generally found an "infected district," which slowly and regularly extends its boundaries, rendering all who come within its limits, subject to this form of fever. In our northern cities, this has been repeatedly observed.

That yellow fever requires for its development a high atmospheric temperature, is illustrated in the island of Jamaica, which has almost every variety of climate. As you ascend its lofty range of mountains, the vegetation of the tropics gives place to that of temperate regions. Whilst the scourge of yellow fever cuts off its thousands annually along the coast of this island, a complete immunity is enjoyed from its effects in these elevated regions. It has never been known, as determined by the researches of Humboldt, to extend, in any climate, beyond the height of 2,500 feet. The pallid and sickly aspect of those residing in the low districts, forms a striking contrast to the ruddy glow of health which characterizes the dwellers in the mountain region.

The question of the contagiousness of yellow fever, was, at this period, (1819) a theme of interminable discussion and acrimonious controversy. Although considerable discrepency of opinion continued to obtain, the mass of the profession finally received as established doctrines, that yellow fever is, strictly speaking, *endemico-epidemic*, that its origin may always be traced to a combination of atmospheric and local causes, and that it is unsusceptible of propagation by specific contagion. The experience of several centuries teaches us that the cause of this fever is perennially present in our southern cities. Indissolubly connected with our soil and climate, it maintains the same relation towards the animal system as the malaria of our southern low lands. Appertaining to geographical position, this dreadful malady, in different grades of intensity, is liable to be developed at any time by the combined operation of heat and other agents.

As yellow fever, as is stated in the Surgeon General's quarterly report, made its appearance, this season, simultaneously at many points remote from one another, at some of which, importation may be regarded as impracticable, its domestic or miasmatic origin would seem beyond the possibility of a doubt. In the summer of this year, the waters of the Missouri and Mississippi were remarkably low, and all those circumstances obtained which favor the evolution of miasmatic emanations. Consequently, a bilious remittant fever of a malignant tendency became epidemic both in Missouri territory and the State of Illinois. Although it generally assumed a milder form than on the seaboard, owing to the circumstance that the morbific agents were less concentrated than in the filthy streets and wharves of populous cities; yet, many of the cases reported had the characteristic features of *typhus icterodes* so decidedly marked, that the Surgeon General entertained no doubt of the identity of the disease.

Its present appearance on the banks of the Missouri and Mississippi confirms the report of its existence, in former years, on the Ohio, in

localities peculiarly favorable to the production of malaria. The celebrated Volney, who had seen the disease in our sea-ports, found, during his travels through the interior, the yellow fever in many places. Dr. Miller, of New York, in his excellent essay on yellow fever, refers to the journal of a voyage down the Ohio in 1796, by Mr. A. Ellicott. This judicious observer was a witness, at Gallipolis, inhabited by some miserable French families, to the disease, which raged violently, the fatal cases being generally attended with the symptom of black vomit. "The fever could not," he says, "have been taken there from the Atlantic States, as my boat was the first that descended the river after the fall of the water in the spring. Neither could it have been taken from New Orleans, as there is no communication up the river at that season of the year. [This was prior to the era of steam-boats.] Moreover, the distance is so great, that a boat would not have time to ascend the river, after the disorder appeared that year in New Orleans, before the winter would set in." In 1797, the disease appeared at New Design, 15 miles from the Mississippi and 20 from St. Louis, and carried off more than one-fourth of the inhabitants, although no person, during the preceding twelve months, had come to this village from any place at which the malady prevailed. As these facts are attested by Dr. Watkins, who had seen the disease in Philadelphia, and as an identity of disease supposes an identity of cause, it is shown indisputably that fevers with the pathognomonic features of typhus icterodes, do occur in positions which forbid the assumption of importation.

In the *last quarter* of the year, diseases were of a mild character. In the northern division, the total of deaths reported in the medical returns was 42, one-half of which occurred in a detachment of the 5th Infantry, stationed at the mouth of the St. Peter's. The prevailing diseases were catarrhal and intermittent fever, diarrhœa and dysentery, and dropsical and scorbutic affections. The causes seem to have been of a local and fortuitous character; such as, exposure to very inclement weather, both on the march to St. Peter's, and during the time employed in establishing quarters; the want of the usual supplies of the lighter articles of food, and the deteriorated quality of the rations that were issued; the difficulty of attending to those details of police duty upon which the health of a garrison materially depends; and, lastly, the absence of all permanent accommodations for the sick.

In the southern division of the army, no peculiarity of morbid action is presented. Two-thirds of the fatal cases occurred in the 8th Infantry, employed in cutting a military road, and in the 6th Infantry and Rifle regiment on the Missouri. It is a fact confirmed by multiplied experience, that the diseases of troops in permanent stations are comparatively few and mild; whilst those of a detachment on fatigue, removed from the usual station, exhibit not only an increased ratio, but an augmented average of mortality. The reports for this quarter from the detachments thus employed, "are" says the Surgeon General, "nearly as large in proportion as they were from most of the frontier posts during the war."

Although the summer of this year was remarkable for the general prevalence of fevers characterized by a malignant tendency, yet the ratio

of mortality for the whole year is about the same as the average of 20 years. The fatal character of fever may also be learned from the medical journals of the day, in which we find detailed accounts of its ravages in Boston, New York, Philadelphia, Baltimore, Charleston, Savannah, Mobile, New Orleans, and Natchez. At New Orleans, it was estimated that upwards of 3000 died of yellow fever; and it was not until after the first of December that it was deemed prudent to return either to this city or Natchez. The interior of the country, more especially in the southern States, seemed to suffer in a corresponding ratio. In the West Indies, the fever exhibited perhaps still greater mortality. At Havana, in default of attention to police regulations, the disease, favored by uninterrupted high temperature, continued to prevail until late in January.

1820. This year is remarkable for the prevalence of several diseases, characterized by phenomena of an unusual character. A peculiar constitution of the atmosphere, at this time, pervaded our whole extent of territory, predisposing to those diseases which were called into action, at various points, by local exciting causes. The ratio of mortality is twice as great as that of the preceding year; a result ascribable to the dreadful ravages of a scorbutic affection.

In the northern division, in the *first quarter*, more than one-half of the deaths occurred at Fort Mifflin and St. Peter's. At the former, then a recruiting station, much disease prevailed, owing, in a great measure, to the necessity of crowding the men during the winter season in barracks not calculated to accommodate more than one-third the number. "In many cases," says Post Surgeon S. B. Smith, "there was a total exhaustion of nervous power, and three expired in the act of conversing with their friends, unconscious of danger." The effects of this endemic were manifested in different forms, but the deaths were chiefly among the cases of typhus fever. At St. Peter's, the prevailing disease was scorbutus. The reports from the southern division, with the exception of a pestilence to be described, presented nothing demanding comment. The aggregate of deaths was 188, of which 157 occurred at Council Bluffs from scurvy, leaving but 31 from all other diseases in the whole division.

The number of men reported at Camp Missouri on the first of January was 788, and at St. Peter's 228, making an aggregate of 1,016. The total of cases reported for the quarter at these two points was 895; of these, 503 were of a scorbutic character, and the number of deaths from this cause was 168.

With scurvy in its more aggravated forms, we are fortunately, in the United States, but little acquainted. Our troops, within the present century have, with the exception of two periods, been nearly wholly exempt from its ravages.

The following table, exhibiting the number of cases of scurvy, and

the consequent deaths in the army, during a period of twenty years, shows the comparative infrequency of the disease:

Years -	1819	1820	1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838
Cases -	7	734	86	4	29	-	8	4	2	8	6	16	3	7	5	15	9	17	59	159
Deaths -	-	190	5	-	-	-	-	-	-	1	-	-	-	-	-	-	-	3	1	1

The cases reported in the last three years occurred, nearly all, either in Florida, or amongst troops that had served in those campaigns. The ratio of mortality is very low. The relation of cause and effect is here very apparent; for, it can be readily perceived that a diet, consisting mainly of salt provisions, in a constitution deteriorated by repeated attacks of intermittent and remittent fever, and diarrhœa and dysentery, will develope scorbutic and cachectic affections. The ration of our soldier, regarded in all its component parts, no doubt disposes the system to scurvy in warm countries; and in these campaigns, whenever it proved deficient in any respect, it was always found to be so in reference to the vegetable portion.

It appears, from the official reports, that the troops at St. Peter's and Council Bluffs were exposed to many of the causes, both predisposing and exciting, of scurvy. During their progress from St. Louis up the Missouri, and from Green Bay up the Mississippi, they were not unfrequently obliged to labor in the water beneath the rays of an ardent sun. Sleeping in their wet clothes, and exposed to a damp atmosphere impregnated with malaria, they became reduced by disease; and in this state of predisposition to scurvy, they began, late in the season, the establishment of their winter quarters. The position at Council Bluffs is stated to be "flat, low, marshy, and clayey;" and the weather, during the winter, was exceedingly cold; the mean temperature for January at Council Bluffs being 8 deg. 62 min., and at St. Peter's 0 deg. 17 min. They were destitute of groceries and vegetable food, except flour and corn, which were more or less damaged from having been wet; and their animal food, which was principally salted, they were obliged to eat during a portion of the winter in a putrescent state. This condition of the meats, however, was as far as practicable corrected by washing and boiling with charcoal.

As this disease is one of pre-eminent importance to the army and navy surgeon, a detailed history of its progress at Council Bluffs will prove no less profitable than interesting. As the reports of the two medical officers, Surgeon T. G. Mower, of the 6th Infantry, and Surgeon John Gale, of the Rifle Regiment, indicate the exercise of sound judgment combined with professional skill, their observations are entitled to more than ordinary consideration.

From a medico-topographical report, made the preceding quarter by Surgeon Gale, the following extracts are made:—

"Cantonment Missouri is situated on the south bank of the river, in lat. 41 deg. 31 min. N., and agreeably to Major Long's estimate, seven hundred and eighty miles above the confluence of the Missouri and Mississippi.

"The range of hills, which, at unequal distances, every where bounds the Missouri, runs in upon the river about two miles below the cantonment, and breaks off perpendicularly at the water's brink. This point, denominated by Lewis and Clark "*Council Bluffs*," was recommended by them as an eligible position for a permanent military work. It affords very sublime and picturesque views; and as a healthy situation, it is certainly unequalled by any other in the vicinity.

"The climate is less healthy, and the face of the country less pleasant, on the upper than on the lower Missouri. The alluvial tract, which in general bounds the river, is narrower; the soil is less deep; and the timber is smaller and less abundant. The winter commences earlier, and continues later. The frost this year killed the vegetables as early as the 25th September, and the severity of winter began the 22d December. The weather is more fluctuating and subject to extremes of temperature. The heat and cold, during the months of October, November, and December, have varied from 88 deg. to 10 deg. below zero of Fahrenheit. The prevailing winds have been from the S. E. and N. W.

"Intermittent and simple continued fevers, rheumatism, dysentery, and catarrh, have been the reigning diseases during this quarter. The predisposing cause may be found in the extreme exposure to which the peculiar mode of navigating the Missouri had necessarily subjected our men."

To illustrate more fully the peculiar character of this endemic malady, several paragraphs from the report of Surgeon Gale, and the entire report of Surgeon Mower, are subjoined.

"The second battalion of Riflemen," says Surgeon Gale, in his special report dated Camp Council Bluffs, October 1st, 1820, "left Belle Fontaine and proceeded up the Missouri on the 15th June, 1819; joined the first battalion at Cow Island, on the 30th of August, and arrived at Council Bluffs, a distance of 780 miles, on the 2d of October.

"It will not surprise you to learn that the fatigue endured in transporting loaded boats such a distance in the peculiarly laborious manner of navigating the Missouri, and exposure to the meridian sun, the dews of evening, and the chill air of night, were productive of disease. Nearly every man had suffered severely from sickness, and many experienced relapses, before arriving at our point of destination; nor did we then cease to suffer from dysentery, catarrh, and rheumatism."

* * * * * * *

"With every exertion, our buildings were not completed until the first of January. At this period, from accumulated suffering, a disposition to despondency was manifest. Nearly all seemed to be reduced by protracted sickness and long continued labor. The sutler's supplies were exhausted, the fresh provisions were nearly all issued, and the Hospital stores were inadequate to an emergency. In this situation,

when the most nutritive diet was requisite to restore our exhausted energies, the men were compelled to subsist on salted or smoke-dried meats, without vegetables or groceries of any description. To add to our list of sufferings, the weather in January became excessively severe; the mercury, at different periods, for several days in succession, did not rise above zero, and once fell 22 deg. below that point. Under these circumstances, about the 20th January, the scurvy made its appearance, to which all other diseases soon yielded precedence; but it proved fatal in few cases until February, when nearly the whole regiment sank beneath its influence.

"The disease continued unabated until the 7th of April, when wild vegetables appeared. After this period, no new cases occurred, and those already affected began to recover. Of the riflemen, eighty fell victims to the malady, sixty at this place and twenty between this point and Fort Osage. None died after the arrival of the sick at the latter place.

"That debility, induced by long continued sickness, was favorable to its development, is manifest from the fact, that those who were most debilitated from previous indisposition, were first seized and numbered among its earliest victims. It may also be reasonably inferred that excessive labor and fatigue, and the severity of the weather, had an agency in the production of the disease; for the officers and non-commissioned officers, who experienced less of the former, and were less exposed to the latter, were exempt from its effects. One officer, who had been long confined by indisposition, formed an exception. This was the only case in which there was the least degree of convalescence observable prior to the appearance of vegetables; and this was probably effected by our being enabled to subsist him on eggs, chickens, milk, &c.—presumptive evidence that a nutritive diet will produce a cure.

"Among the causes producing the disease, may also be enumerated the residence of the men in green damp rooms in conjunction with a faulty diet; for the riflemen, who are more expert in hunting than the Infantry, procured more wild meat and suffered far less. Our hunters detailed especially for that purpose, who resided in the woods and subsisted on game, were in no instance unhealthy. An officer with a detachment, who wintered in a half-faced camp, some distance below this place, and subsisted his men entirely on fresh provisions from the woods, experienced no sickness of any description."

The following is the special report of Surgeon Mower:—

"Camp Council Bluffs, *October* 1*st*, 1820.

"Sir: I have been honored with your letter of the 13th May, requiring me to 'transmit with my next quarterly report, a detailed account of all the causes, both immediate and remote, which have probably produced the unusual mortality among the troops on the Missouri; stating the situation and circumstances of the men, both in relation to the nature of the country and of the duties required of them; the quantity and quality of their supplies of all kinds, &c.'

"It may be proper to premise that the general character of the report required supposes me possessed of information, which in no wise appertains to my department, and for which I have never been clothed with authority to ask, much less to demand. With the exception that the issues of provisions fell under my inspection, it is obvious that my knowledge of the supplies, belonging to the Quartermaster's and Commissary's Department, is for the most part casual and unofficial. To remedy this embarrassment, I addressed a note to the commanding officer of the regiment, requesting him to afford me information upon several subjects, with which I am imperfectly acquainted. To this note I have received no answer.

"It may be worthy of remark that some circumstances, perhaps important to this report, may have transpired during my unavoidable absence from the main body of the regiment, for more than four months. Having embarked at Belle Fontaine on board the steamboat 'Johnson,' she was arrested in her progress about 300 miles above the mouth of the river. This occurrence necessarily delayed my arrival at the Council Bluffs till the 10th of November.

"As few cases of mortality are recorded in the regiment since its arrival on this river, in which the scorbutic taint was not predominant, our inquiries are consequently confined to the probable causes which produced this particular disease. It is foreign to my purpose to attempt a theoretical discussion of the nature of the disease in question, or its proximate causes. The circumstances which preceded, and which are supposed to have contributed to the production of that distressing malady, form the subjects of consideration.

"The prevalence of scurvy in the 6th Regiment of Infantry, during the last winter, may be attributed to the following causes, viz: excessive and long continued fatigue—cold and dampness—faulty diet.

The 6th Regiment of Infantry, previously to taking up its march for the Missouri, had been cantoned at Plattsburgh for nearly three years, where it had experienced much of the "gay delight" of a military life with few of its hardships or privations. During this period, many foreigners had entered its ranks, who, from education and habits, were better fitted for the ordinary duties of a garrison than to undergo the laborious toils which awaited them.

"The corps left Plattsburgh on the 20th of March, and arrived at Pittsburgh the 1st of May. At this place it halted one week, when it was embarked on board transports for St. Louis. The confinement on board the boats during our passage down the Ohio, together with the use of the river water, which was extremely turbid, added considerably to the sick list.

"On our arrival at Belle Fontaine, (June 8,) the men appeared somewhat enfeebled; nor was the weather, which proved excessively warm, calculated to restore them to strength and activity. On the contrary, they seemed to experience the same languor, which is felt by the northern man on passing into tropical climates.

"On the evening of the 4th July, the regiment was again embarked on board of three steamboats and four barges, destined for the Council

Bluffs. Without the experience of watermen, the troops had now to contend with a torrent, which, in point of rapidity and natural obstructions, is perhaps without a parallel.

"The narrow channel of the Missouri at low stages of water, combined with its frequent and sudden bends, precludes in a great measure the use of sails. In propelling the barges, the cordelle and setting poles form the principal dependence. This mode of ascending the river requires of the navigator the most active and incessant exertions; while the severity of his labors is not a little aggravated by being frequently compelled to plunge into the water. After the most persevering exertions, the several companies composing the regiment reached the place of destination between the 3d of October and the 14th of November. To the failure of the steamboats this dispersed state of the regiment is to be attributed.

"It now remained for the troops to shelter themselves from the inclemency of the season, and to secure themselves against hostile aggressions. An alluvial bottom on the right bank of the river, about two miles above the Council Bluffs, was designated as the site for the cantonment of the infantry and rifle regiments. This bottom is skirted by a range of high bluffs, which alternately approach and recede from the river. These bluffs are intersected by several deep ravines and small water-courses, which break through from the high-lands. The bottom composed principally of clay, is low and flat, and consequently productive of a humid atmosphere. This region is in its primitive state. With the exception of the bottom just described, and the borders of streams generally, which are covered with a thin forest, consisting principally of poplars, walnut, elm, and some oak, the adjacent country presents a boundless prairie. The extremes of heat and cold inseparable from an inland region, are here increased by the prevalence of high winds, which are favored by the openness of the country.

"The site for the cantonment, as subsequent experience has proven, had little to recommend it, excepting the facility of procuring timber. A small lake of about three miles circumference, during the low stages of the Missouri, approaches within 600 yards of the cantonment. At the late unusual and perhaps unprecedented rise of the river, its waters communicated with those of the lake, and inundated the adjacent bottoms, including the ground on which the cantonment had been erected.

"The agency of this lake in producing those diseases, which afflicted our troops while stationed in its vicinity, has been a subject of speculation. It is true, experience has taught us to guard against the exhalations arising from stagnant bodies of water, more especially if any portion of the soil recently submerged is exposed to the direct rays of the sun. When various circumstances combine, calculated to produce any particular effect, it is often difficult to assign to each its peculiar agency. In the present instance, the character of the diseases which prevailed, and the period at which they commenced, seem to lessen very much the probability that any unsalutary effects resulted from our proximity to the lake.

"Early in October, the ground having been surveyed and laid off, the regiment commenced the erection of its barracks. At this period, only five companies out of eight had arrived. The position selected for our cantonment was surrounded by a thick grove of poplars—a species of timber known in this country by the name of *cotton-wood*. The principal part of the logs and plank used in the construction of the barracks, was procured in the immediate vicinity. The covering (clapboards) for one-half the rooms, the stone for fire-places, and the lime, were transported by water the distance of ten or twelve miles. The remaining rooms, including the store-houses, were covered with shingles or boards procured near the cantonment. Fifty eighteen-feet rooms were erected for the accommodation of the regiment, exclusive of store-houses, workshops, &c. The barracks were constructed with single roofs, having a perpendicular height of 9 feet in front and 18 in rear.

"It is difficult to say at what period the quarters were completed, or when they were first occupied. Some of the officers went in between the 20th and 30th of November; whilst others remained in tents for more than four weeks after. The men moved into their barracks at different periods during the month of December, although many of the rooms were still deficient in floors, bunks, doors, &c. The regimental hospital was prepared for the reception of the sick about the 20th of the same month.

"The latter part of December and the whole of January proved excessively cold, the mean of the latter month being 8 deg. 62 min.; and the barracks, hastily thrown up from green materials, opposed but a feeble barrier to the inclemency of the season. Notwithstanding the severity of the weather, the regiment was still constantly employed in procuring materials for the completion of the barracks, fire-wood, &c. Owing to the small number of working cattle and the feeble state of the men, it required the whole strength of the corps to accomplish these objects. It is here proper to remark that no objection can rest against the supply of clothing furnished during the last winter.

"The timber (cotton wood) which composed the greater part of the barracks, although convenient and sufficiently abundant, was particularly objectionable on account of its humidity; the quantity of water contained in this wood is almost incredible. The advanced state of the season, however, compelled the men to take shelter under their rude covers, green, damp, and unfinished as they were.

"The state of our subsistence stores had long been reviewed with concern. Fresh beef, which had been issued to the troops since their arrival, in the usual proportion, was in the latter part of January restricted to the use of a few hospital patients. The country not abounding in game, and the regiment having no expert hunters, little advantage was derived from the chase. The important articles of beans, peas, and vinegar, contemplated to have formed component parts of the ration, failed altogether. Salted pork and beef, bacon, flour, and Indian corn, constituted the substantial part of the ration. By far the greater part of the meat was decidedly in a putrescent state, and absolutely unfit for issue; the smell and taste both rejected it with disgust. The flour,

although less exceptionable than the meats, and originally of a fine quality, had become musty previously to its issue. The corn, which was furnished in the proportion of two pints to every six rations, was soon thrown aside as a drug. Deprived of vegetables and the usual condiments of the table, the repast of the soldier was, at the same time, deficient in nutriment, unpalatable, and unwholesome.

"The medical supplies of the regiment, although sufficient in quantity for ordinary seasons, were of a very inferior quality, and by no means calculated to meet the present exigency.

"Previously to the appearance of scurvy, the men had been much enfeebled by dysentery and pulmonic inflammations; and were consequently rendered more susceptible of other ailments. The former disease commenced its attack soon after their arrival, and raged with violence till the close of the year. It was then succeeded by inflammatory affections of the lungs, which prevailed with little abatement till the latter part of January.

"Early in this month (January) a scorbutic taint was perceptible in some of our patients, who were laboring under other diseases. At first the cases were mild, and appeared to yield, in some measure, to treatment. During the whole of this month, it was noticed that the recovery of our patients was peculiarly slow and precarious; in many cases, after the acuteness of disease had been subdued, the sufferer continued to languish and decline. Early in February the progress of scurvy had become alarming; its baneful influence was rapidly extending to every form of disease. The situation of the command had assumed a serious aspect. Most of the exciting causes still existed, while the means of relief were beyond our reach. The commandant of the post having been apprized, from time to time, of the nature and extent of the prevailing malady, and of the means best calculated to arrest its progress, organized parties under the direction of officers, and despatched them up the river in pursuit of buffalo and other game. Unfortunately the success attending these exertions was very inconsiderable.

"We regret to acknowledge that the firmness of the American soldier should have been for a moment shaken by any concurrence of circumstances. We cannot conceal the fact, however, that during the prevalence of that loathsome malady which afflicted our garrison, gloomy forebodings were depicted on many a countenance; nor were the best directed efforts to counteract this despondency, by introducing diverting games, music, &c., attended with much success.* On the 23d of Feb-

* Surgeon Mower having several times witnessed small-pox and epidemic cholera in their most malignant forms, avers that neither is as dreadful as the endemic described in his report. It is not the sight of pale forms, encircled by bloody bandages, that blanches the soldier's cheek, for he knows that such is the chance of battle. Even when the surgeon tells his wounded patient that he must look for help beyond the grave, the transition from time to eternity is borne with calmness and resignation, soothed by the consciousness of having fallen in the discharge of his duty and in his country's cause. But when the wards of an hospital become crowded with ghastly and attenuated frames, victims to a baneful

ruary, the commandant, feelingly alive to the interests of the soldier, summoned together a board of war to deliberate on measures for the relief of the command. Of the result of these deliberations, I am at present ignorant. In compliance with the wishes of this board, I submitted to them a report relative to the health of the regiment, and the means best calculated to counteract the influence of the disease then unhappily existing. On the 25th of the following month, 70 scorbutic patients belonging to the 6th Regiment were embarked on board of keel boats, under the charge of Surgeon's mate Nicoll, destined for Fort Osage. At this place it was believed that they would more speedily obtain a regimen adapted to their condition.

" On the removal of these men, we had nearly 100 patients left, suffering under the influence of the same disorder. During the first week in April, the weather proving favorable, we removed a large proportion of our sick from the Cantonment, and located them on a small stream under tents, about three miles distant. Fortunately, at this period, wild vegetables began to shoot up. These powerful remedies, combined with mild weather, pure air, and change of scenery, soon banished the demon, *Scurvy*, and restored its victims to strength and activity. So potent was the influence of this new state of things, that patients recovered under the most unpromising aspects. Not a single death occurred at " Camp Recovery," although several persons were removed thither in a seeming moribund state. In some of them, every tooth had dropped from its socket, and even large portions of the lips had sloughed off. Among the vegetable products first discovered, and most esteemed for its remedial virtues, was the wild onion, a very diminutive bulbous root, not larger than a nutmeg.

" When we reflect on the long and arduous march performed by the 6th regiment of Infantry,—the unavoidable fatigues which awaited these troops on their arrival at the place of destination,—the vicissitudes of heat, cold, and dampness, to which they were exposed,—the wretched quality of provisions on which they subsisted,—we cease to wonder that sickness and mortality have prevailed. Had the corps maintained its health, we might be warranted in believing that the age of miracles had returned.

I have the honor to be, very respectfully,
Your obedient servant,
T. G. MOWER,
Surgeon 6th Infantry."

JOSEPH LOVELL, Esq. *Surgeon General U. S. Army.*

climate, or a loathsome pestilence, living skeletons, debilitated and slowly sinking, doomed—

——" to feel
The icy worm around them steal,
Without the power to scare away
The cold consumers of their clay,"

how appalling to the living is the spectacle of the dead and the dying! When those, who but several days previously bore their comrades to the grave, are in turn stretched upon the same bier, then it is that the bravest heart quails!

During the *second quarter* of the year, there was no prevailing complaint. In the northern division there were but 16 deaths, of which six arose from pulmonary consumption. In the southern division, the deaths numbered 61; of these, however, 21 occurred early in the quarter, being the effects of the scurvy which had prevailed, during the winter, on the Missouri. So far as regards the effects of climate, it will be seen that the mortality of this division must be still further reduced. At Fort Scott, Ga., the average strength of the command was 410, and the number of deaths 8. Of these fatal cases, one arose from apoplexy and another from hœmatemesis; and in regard to the six others, it is remarked by Surgeon Thomas Lawson, that "life was nearly exhausted on their arrival at the post from Fort Gadsden, and that 5 or 6 had died on the passage, in consequence of being pent up for more than twenty days in a small vessel, and deprived the greater part of the time of medical aid." At Fort Gadsden, seven recruits died very soon after their arrival from the north. The sending of recruits to the south at unpropitious seasons has happened too often in our military history to be reconciled on the ground of necessity; and as a specimen of the moral and physical constitution of the subjects exposed to this trial, it is remarked by Post Surgeon Walmsey, that—"among 70 recruits from Philadelphia, several are old men, three are idiots, and nearly all intemperate."

The scorbutic patients of the 6th Infantry and Rifle regiment, as already stated, were removed to Fort Osage. The number of cases not embraced in the previous report was 119, of which 7 proved fatal. The numerical strength of the command was 117, and the sick report, at the close of the quarter, exhibited but 27 cases. The 6th Infantry, numbering from 200 to 250 men, had 92 cases, chiefly scorbutic, on the sick list at the previous quarterly report; of these, 13 died before the 15th of April, after which period no death occurred. The Rifle regiment, numbering about 350, became remarkably healthy; although the sick report presented 77 cases, principally scurvy, at the beginning of the quarter, but one death took place. Fernandina, Montpelier, the Bay of St. Louis, and Petite Coquille, were extraordinarily salubrious. At Baton Rouge, there were 9 deaths out of 383 cases; and at New Orleans, 8 deaths in 36 cases.

During the *third quarter*, the diseases of the northern division presented their ordinary aspect. The aggregate of deaths was only 28; of which 6 were from typhus fever, 4 from phthisis pulmonalis, and 3 from intemperance, the causes of 7 being undesignated.

In the southern division, the mortality was unusually great; the majority of the deaths, however, occurred at a few posts. The aggregate was 116; 25 at Fort Gadsden, 12 at Apalachicola Bay, 16 at Montpelier, 10 at the Bay of St. Louis, 8 at New Orleans, and 30 at Baton Rouge. The chief complaints at these posts, (the causes of death at Baton Rouge not being stated,) were diarrhœa and dysentery, and intermittent, remittent, and typhus fever. Of the deaths reported at the other stations, 6 arose from typhus fever, 30 from dysentery, and 28 from bilious remittent or yellow fever.

The unhealthiness of the summer season in the south may be traced

have been everywhere present. That the troops have suffered in the utmost severity, the record of mortality affords melancholy evidence.

"About the 15th July, the simple inflammatory fevers began to yield to remittents; dysentery and diarrhœa also gave ground; but intermittents maintained their position in the foremost rank. On the 1st August, remittents became more rife, and exhibited in a short time terrible phenomena. In September, they still gained ground, and eventually became so formidable as to prostrate every thing against which their force was directed.

"*Bilious remitting fever*, although not the most prevalent disease of our cantonment, claims, on account of its malignant character, our first and special consideration.

"This disease, many cases of which present the characteristic features of yellow fever, exhibits in its invasion, progress, and termination, very diversified phenomena. Although inflammatory symptoms most commonly mark its attack, it frequently assumes, even at the onset, a typhoid character. Its course is very irregular, manifesting various and opposite symptoms in different, and frequently in the same subject; and its termination, if not immediately in death or restoration to health, generally eventuates in an intermittent, a diarrhœa, or dysentery, or in visceral obstructions. Its fatal close is sometimes sudden, but oftener gradual. The patient, in some instances, sinks directly under the weight of the primary disease; in other cases, after withstanding the first assault, and even that of two or three successive maladies, he willingly resigns his life, worn down by continued suffering. Whilst some expire in convulsions, others pass away without a groan or a struggle.

"The precursory symptoms, in every modification of the disease, are, mental anxiety, listlessness, languor, and lassitude on the least muscular exertion. But the disease is presented under several prominent modifications. The symptoms of the *first or milder grade of the regular form*, are nausea, pains in the back and extremities, vertigo, acute pain in the head, and vehement pyrexia. The febrile exacerbation is commonly ushered in with a chill, although frequently without it. During the stage of reaction, the pulse is frequent, full, and tense; an intolerable heat is diffused over the superficies of the body, with a similar sensation in the internal organs; the skin is dry and parched; the tongue is slightly moist, and covered with a white or greenish fur; great determination to the head and high delirium usually exist.

"In the *second grade of the regular form*, the disease is manifested by vertigo, imperfect vision, obtuse pain in the head, pain and anxiety in the region of the chest, difficulty of respiration, a tendency to coma, vomiting sometimes attended with purging, great prostration of strength, and loss of the power of locomotion. In this modification, the reaction is less frequently preceded by a chill; the pulse is small and frequent; the skin is dry and contracted; the tongue is parched and constricted, with a glossy appearance; the thirst is intolerable; a horrible sensation of burning heat is felt throughout the intestines; and stupor prevails in every stage of the disease.

"In the *third variety, or first irregular form*, the patient is suddenly affected with syncope, he falls down and remains in a state of insensibility for fifteen or thirty minutes, and on being resuscitated, a cold sweat appears; his respiration is laborious, with great anxiety about the præcordia; the stomach rejects its contents, and the bowels are often violently evacuated; and lastly, he is seized with general paralysis. In this condition, the pulse is small, quick, and frequently intermitting; the skin is very cold and shrivelled; the tongue maintains its natural appearance; little or no delirium prevails; but the tendency to syncope is so great, that the patient faints upon the least change of position, more especially when placed in an erect posture.

"In the *fourth modification, or second irregular form*, the victim seems affected with vertigo and total loss of vision; he totters, reels, and sinks exanimate to the ground.

"Vertigo is a universal symptom, and frequently continues through the whole course of the disease. Symptomatic phrenitis is generally present in the first form, and stupor prevails in almost every case of the second grade. Unquenchable thirst, a very distressing sensation of internal heat, and difficulty in respiration, are phenomena present in all its modifications. Constipation of the bowels is a constant attendant, and dysuria, ischuria, gastrodynia, and various anomalous symptoms often supervene during the progress of the malady.

"In a number of cases, the skin becomes yellow. This, although a highly unfavorable symptom, is not absolutely indicative of a fatal result. Towards the fatal termination, the skin assumes a saffron hue, a cadaverous smell exhales from the body, hæmorrhage takes place from the mouth, nose, and ears, whilst the stomach constantly ejects a very dark green or black colored matter.

"In the *first* form, a remission of fever is scarcely perceptible for forty-eight or sixty hours, after which period there are daily exacerbations and remissions. In the *second* form, it assumes at first the type of a quotidian or rather double tertian, for every other paroxysm is decidedly the more severe. In its *third* modification, the disease assumes no definite characters. In some instances, every organ quickly resumes its proper functions, the enemy seeming to have expended his whole force in the first assault. In other cases, the patient lies prostrate for twenty-four or thirty-six hours, when symptoms of resuscitation appear, and his system gradually, but not without many struggles, regains its wonted energies. There are other cases, again, in which the powers of life are prostrated beyond recovery. Under these circumstances, the person remains in a state of prostration, but quite rational and calm, until the third, fourth, or fifth day, when nature, seeming to rally all her powers, makes a violent effort to free the system from oppression, but failing in the attempt, the patient expires in the struggle. In the *fourth* form, the victim is at once cut off.

"The predisposing and exciting causes of the disease under consideration, are so various and complex, that it were no easy matter to assign to each its proper influence. On the one hand, we have exhalations from surrounding marshes, and the effluvia arising from putrid animal

and vegetable matter; and on the other hand, fatigue, drunkenness, insolation, and exposure to cold and damp night air, all acting in conjunction with the effects of unwholesome provisions and a disaffected state of the general mind.

"Our police, although far from commendable, is perhaps as well maintained as is practicable among recruits. Despite the efforts of officers, drunkenness will prevail. Whiskey is smuggled into camp; moreover, as a few of the men dispose of their whiskey ration, others are enabled to get daily a pint or a quart of ardent spirits. The fatigue endured by our men in transporting provisions, &c., from Fort Gadsden to this point, and in building and repairing barracks, &c., cannot be regarded as excessive to men of ordinary physical strength and accustomed to labor; but to the refuse of mankind, gathered from the purlieus of our cities, the burdens imposed may have been beyond the measure of their abilities. Our provisions have been in a state of such impurity, that were other supplies within reach, it is very probable that the greater part would be condemned. As the men have lately changed their mode of life, have come to an unfriendly clime, and are ignorant of their new profession, they have experienced just enough of military life to hate the service.

"In prescribing for this *bilious remitting fever*, the therapeutic means have been as various as its different forms, and the several grades of each modification. As each grade is characterized by peculiar pathological conditions, the treatment was based upon the principle to combat the symptoms as they arise.

"In the inflammatory form of the disease, it is absolutely necessary to abstract from twelve to twenty ounces of blood, an operation which it is sometimes required to repeat once or twice. As a general rule, I usually administer on the first day an emetic, and on the second a cathartic; and thenceforth adopt means to procure daily evacuations, a result not easily effected in consequence of the extreme torpor of the intestinal canal. With the view to restore the healthy functions of the skin, and to maintain the bowels in a soluble state, I give, every three or four hours, a powder composed of nit. potassæ, ant. tart., and submurhydrg. Cooling acidulated drinks, and the application of cold water by effusion, have proven very useful remedies; whilst the application of blisters is frequently required during the progress of the malady.

"In the second modification, I usually, on the first day, if the state of the stomach allows, administer a dose of ipecacuanha; and should it not excite purgation as well as emesis, some aperient medicine is soon after given. Frequently, by the next morning, the reaction has become so violent as to demand depletion. I accordingly abstract blood and administer a cathartic, and at night prescribe an anodyne diaphoretic draught. The subsequent remediate management depends on the character of the morbid manifestations. If it become a disease of high febrile action, I resort to such means as tend directly to reduce arterial excitement, and as soon as a long and distinct remission or a perfect intermission is established, I administer some of the milder tonics. Should a low form of fever, on the contrary, supervene, I prescribe,

during the exacerbation, the spiritus nit. dulcis every three or four hours; and when a distinct remission or complete apyrexia occurs, wine, bark, and other tonics, are administered. The application of cold water or vinegar and water, by ablution or aspersion, has been tested; and its good effects, in cases pertaining to both these modifications, have been abundantly established.

"In the event of the stomach's being so irritable as to reject every thing, I administer copious draughts of warm water or chamomile tea, and afterwards a cordial anodyne. The irritability being thus allayed, 15 or 20 grains of calomel can be given on the following day with advantage. The subsequent treatment will depend upon circumstances.

"In the *third* modification, the principal indications are, to allay the irritability of the stomach and to support the sinking powers of the system. To fulfil these views, the application of hot bricks to the feet and flannel wrung out of boiling water to the abdomen, and the internal administration of æther and laudanum, are prompt and certain in their effects. If retained by the stomach, the draught is repeated according to the urgency of the symptoms; but if rejected, 40 or 50 drops of laudanum are united to a saline draught, and given in the act of effervesence—to be repeated at intervals of several hours, *pro re nata*. In cases of this kind, large and active sinapisms, or blisters to the region of the stomach, have been found very servicable; anodyne enemata frequently repeated have proven decidedly beneficial, and the application by friction to the abdomen of a linament composed of ol: olivar: aq. ammon: and tr: opii, has also been attended with marked advantage. After the vital actions have been re-established, the patient will require but little medicine, as each organ will naturally resume its appropriate function. It not unfrequently happens, however, that fever of a typhoid character supervenes, impeding and sometimes arresting the progress of convalescence.

"With those who have fallen by this disease in its fourth modification I had very little to do, for disease and death at one and the same moment grappled the victim, and instantly plunged him into eternity.

"As the history of this destructive malady supersedes the necessity of a detailed account of the other diseases of our camp, I shall exhibit simply the outlines of their character.

"The diseases under consideration are verycomplex, may perplex, and often come in 'such a questionable shape' as to defy all nosological systems. The constitution of the atmosphere has been so peculiarly favourable to the production of *bilious remitting fever*, that all other diseases have been taught to acknowledge its supremacy. Upon a general survey of the peculiarities of each disease, the fact is clearly established that the character of all is modified by the prevailing epidemic. Nearly all the cases of dysentery are accompanied with some grade of fever of the remitting type, and would have been, perhaps, bilious remittents, had not a predisposition to intestinal derangement been induced in the subjects by their having been drenched in rain, having slept in wet clothes, or having laid out in the night air. The cases of diarrhœa also are nothing more than irregular forms of the reigning disease, the predis-

position having been induced by eating very course and impure corn-meal, or by the excessive use of spirituous liquors. It seems as though the enemy, perceiving a breach in the fortress, changed his mode of attack and brought his whole force to bear upon the point most vulnerable.

"Nor are intermittents less under the control of the prevailing type; for most of them are of the quotidian form, which readily runs into the remittent, and then into the continued type, assuming sometimes a malignant character."

"With sentiments of high consideration and respect,
I have the honor to be,
Your obedient servant,
THOMAS LAWSON,
Surgeon, 7th Infantry."

"JOSEPH LOVELL, M. D.
Surgeon General United States Army.

In the *last quarter* of the year, the number of deaths in the northern division was 26, and in the southern 122. At Fort Scott and Baton Rouge, those two most deadly positions, the mortality was extraordinarily great. In the consolidated 7th regiment of Infantry, consisting of 760 men, there were 769 cases of indisposition, a majority of them malignant diseases, and 32 deaths. At Baton Rouge, in a command of about 375, the cases of disease were 553, and deaths 38. The chief causes of the mortality at these two posts have been referred to already; but as the diseases of the former post assumed unusual characters, some extracts from the report of Surgeon Lawson, dated 1st of January, 1821, are presented, in elucidation of their peculiarities.

"In opposition to our confident expectations, the troops at this place continued extraordinarily sickly until the 20th of November, and up to this period cases of malignant bilious fever daily occurred.

"As the season advanced, our perplexities augmented. Diseases commonly the most simple became complex; the more difficult grew malignant, and all assumed such an aggravated character as to be scarcely definable. To determine the causes of all these anomalies, I have not been wanting in proper exertions; nevertheless, the conclusions to which I have arrived, are not altogether satisfactory. Independently of the various specific sources of disease among us, so many other causes tending to the destruction of the 7th Infantry have existed, (the elements themselves being against us,) that I cannot otherwise account for the misfortunes that have befallen us, than by ascribing them to a dispensation of Providence.

"About the 15th of September, as the sick-list increased daily in numbers, and the diseases in malignancy, it was deemed advisable that a portion of our invalids should be removed beyond the influence of the cantonment's atmosphere.

"Accordingly on the 18th, such as were capable of enduring the unavoidable fatigue, and whose complaints were likely to be benefitted by a change of air, in number about 70, were removed under the charge of one of the Assistant Surgeons to a high pine ridge to the southeast

of, and three miles distant from this place and the river. But scarcely were the tents pitched before a heavy rain came on, which, continuing five or six days, occasioned the immediate dissolution of several, and produced irreparable injury to all the sick. Many of those affected with intermitting fever, were also attacked with dysentery or diarrhœa, and *vice versa*. Nay, the diseases generally became blended the one with the other.

"As the weather soon grew mild, this little colony began to revive, one or two dropping off occasionally, until the 22d of October, when the sudden fall of the thermometer laid all prostrate, some of them never more to rise. This was the most fatal period. Every convalescent relapsed into his old, or contracted some new disease; and this state of things continued, with but little melioration, until the 23d November, when the establishment was broken up, and the surviving sick brought back to the cantonment. Thus did, in consequence of adventitious circumstances, the most disastrous results follow our best directed efforts.

"Nor was death much less busy at this place. As soon as cold weather commenced, which came on a month earlier than usual, all diseases exhibited new complications and more fatal results. In some cases, every symptom of disease having been removed, the convalescent indulged the hope that his sufferings were at an end; but an ill-omened change, without any evident cause, would unexpectedly appear; and so little power of resisting the influence of external agents remained, that even a sudden reduction in the temperature of the atmosphere was sufficient to destroy vitality. In other instances, the patient seemed overwhelmed with several diseases. Between the 22d October and the 1st December, almost every case of intermittent fever was complicated with diarrhœa or dysentery. Remitting fever and scurvy were also frequently combined. Nor were the instances few in which four distinct characters of disease were developed in the same individual. For days, for weeks, nay longer, would one of these poor creatures stagger under the burden of intermittent fever, dropsy, and scurvy combined, when the diarrhœa also coming on him, he necessarily sank under the accumulated weight of disease."

In the northern division, during the *first quarter*, diseases presented their usual characters. Towards the end of January,
1821. scurvy made its appearance at Fort Crawford, Prairie du Chien. There were 16 cases, two of which terminated fatally. It was ascribed to the influence of a damp atmosphere in conjunction with the want of fresh vegetables, upon constitutions reduced by previous sickness. The two fatal cases occurred in individuals who had labored, during the summer, under intermittent fever complicated with hepatic lesions. They sank under a scorbutic dysentery. Surgeon's mate Mendenhall reports that, having used the "nitrous vinegar" with little success, he resorted to the employment of *raw potatoes and vinegar*. "To be satisfied of the virtue of this remedy," he says, "I selected four or five of the worst cases, which had received no alleviation from the use of the nitre and vinegar, and directed each one to eat per day a common soup-plate full of the potatoe sliced down in a sufficient quantity of vin-

egar. It had an immediate effect on the stomach, which recovered its natural vigor; the bowels became regular, the pains abated, the stricture of the tendons was overcome, the ulcers put on a healthy aspect, and in a few days the patient found himself in a happy state of convalescence."

The southern division was unusually healthy, the total of deaths being but 42; of which eight occurred at Baton Rouge in a command of 372 men, with 347 sick; 11 at Fort Gadsden, on the Appalachicola river, in a battalion of 250 Artillery, with 296 sick; and seven at Fort Scott, in the 7th Infantry, 750 men strong, with 541 cases of indisposition. At Fort Scott the mortality was, for several quarters, mostly confined to northern recruits, who are represented by the medical officers to have been unfit for military service in any clime or season.

In reference to Baton Rouge, the Surgeon General, in his quarterly report, speaks thus:

"The causes of death are not mentioned. The chief complaints were diarrhœa, dysentery, and pleurisy. The troops, more especially the recruits, had been very sickly during the previous quarter, and many of the fatal cases were probably of long standing. The reports of last year, [ending 31st March,] show more sickness and mortality at Baton Rouge than at any other post. The total number of deaths in the army was 403, of which 91 occurred at this place, [the annual mean strength being 372,] being nearly a fourth of the whole. The only material cause assigned by Surgeon Harney is the exposure of the recruits to too much fatigue, during the warmest season of the year, in a climate to which they are unaccustomed."

At Fernandina, a decided improvement in the healthfulness of the troops was manifested. This happy result is attributed by Assistant Surgeon Weightman to the attention given to cooking and the establishment of regular messes, and the commutation of the ration of whiskey, (which was voluntarily relinquished,) for tea, coffee, and sugar. Many of the fatal diseases usually imputed to climate and locality arise, in a great measure, from defects in police and in the internal economy of the camp. Cleanliness is the life of an army. The Jewish code, enjoining ablutions and purifications as religious rites, has been quoted as a system adapted to a camp. The general police of the camp, no less than the observance of personal cleanliness, should, at all times, be rigidly enforced. Attention in the selection of recruits is likewise all-important, and equally so is the mode of employing them during the first year of service. The mere labor performed by the recruit is generally but a minor part of the inconvenience arising from his new mode of life; for the fatigue and exposure that may be very well borne by a soldier after twelve months' service, will often prove destructive to him who has not yet learned to take care of himself when relieved from duty.

The reports of the *second quarter* present nothing worthy of comment, save the remarkable healthfulness of the season. To this general remark, an exception is found at Baton Rouge and Fort Gadsden. The total of deaths for this quarter was 41, of which 16 occurred at the former and seven at the latter post. At Fort Scott, the other most sickly position then occupied by troops, there was fortunately no death.

The *third quarter* presents a different aspect, the mortality being more than twice as great. The aggregate of deaths was 104, of which 67 occurred at three posts, viz: at Baton Rouge 35, Fort Scott and neighboring encampments 18, and Fort Gadsden 14, leaving but 37 for all the other stations. At the eastern posts, from Fort Sullivan to Fort Severn, including West Point and the arsenals of Watervliet and Pittsburgh, diseases presented a mild type and the ordinary variety, there being but one death. From Fort Washington to Fernandina, the reports exhibit but little sickness. At the post at Norfolk, there were two fatal cases of yellow fever. At Fort Scott, there were still in operation, the same causes of disease,—intemperance and irregularity of every description. The police was exceedingly defective; and the recruits, brought from the north, resembled the paupers which, in more recent years, have been transported to our shores from Europe. During this quarter, there were twelve cases of scurvy; and nearly every fatal case of disease might be traced to the abuse of spirituous liquors. "For the last two years," says Surgeon Lawson, "our cantonment has never been encircled by a chain of sentinels; nay, the resemblance scarcely of guard duty has been maintained within our command."

The men thus unrestrained gave loose to their inclinations, and wandered through the country by day and by night to the manifest prejudice of their health, and in violation of every rule of military service.

Moral as well as physical causes then, may be considered as having had an agency in producing the prostration of the 7th Infantry. Prostrate indeed it is, for it is crippled beyond recovery, and lies a wreck subject to the influence of every blast.

At the Barancas there were 24 cases of scurvy, attributed to the influence of local causes, and the want of vegetable diet; the deaths were 4, one of which arose from scurvy. At St. Marks, there were 7 deaths. The prevailing diseases were remittent and intermittent fever, diarrhœa, and dysentery. The following extract from the report of Assistant Surgeon B. King, renders the prevalence of disease no ways extraordinary:—"My hospital is very bad, and more or less wet at every rain; on the 16th September, the tide rose uncommonly high, which nearly inundated this place and the adjacent country; the water was a foot deep in the hospital; in fact, I visited my sick and went through it in a canoe. The bunks were sufficiently high to keep the sick out of the water; but this occurrence, as well as the dampness from the rains, had a very injurious effect on my patients, more particularly those laboring under dysentery and diarrhœa."

The civil practitioner has little idea of the disadvantages which attend the professional career of his military brother. Among civilians, the comforts of life, and the solicitude of friends, rob disease of half its terrors. The army surgeon, on the other hand, is not unfrequently placed in positions which preclude the practicability of affording protection to his sick from the inclemency of the weather, or he may find himself, despite his own exertions, deficient in medicines and hospital stores. As one day's action may bring under his care a greater number of violent injuries than the best employed civil practitioner could wit-

ness in a life time; so operations become indispensable, which might be deferred, or perhaps wholly avoided, in private life. Even the naval surgeon is placed in far more favorable circumstances than his army brother. The sailor fights at home, the hospital, medical supplies, provisions, and many little comforts, all within reach. Not so with the soldier, who often lies on the field of battle, wounded, destitute of food, bedding, or shelter; or torn from his comrades, is conveyed to distant hospitals in carts or litters, over broken-up roads or intricate mountain passes.

At Fort St. Philip, intermittent fever was the prevalent complaint; and at the Bay of St. Louis, diarrhœa and dysentery. At Baton Rouge, the total of deaths was 35, in a mean strength of 287, being one-third of the aggregate of the whole army. Surgeon Harney reports, "the most of the diseases, and particularly those of a severe type, are almost solely the consequence of severe labor and exposure. * * * The men employed in getting timber in the swamps of the Mississippi, some 10 or 15 miles above this place, have been very subject to diseases which have proven of the most severe and fatal character." The 1st regiment of Infantry had in truth become "hewers of wood and drawers of water," much better qualified to shoulder a hod than a musket. All *esprit du corps* being lost, the officer, instead of drilling his men in warlike exercises, expended his military spirit in superintending fatigue parties, operating in dismal swamps. Baton Rouge, or more properly speaking, the swamps of the Mississippi, proved literally the grave of the regiment.

The reports from the western posts, including Plattsburg and Sackett's Harbor, exhibit nothing requiring special comment. The principal disease was intermittent fever, and the total of deaths was only seven.

During the *last quarter* of this year, the chief diseases were intermittent fever, diarrhœa, and dysentery, which have, at all periods, proven the scourge of camps. The total of deaths reported was 126, being nearly equal to that of the corresponding quarter in the previous year, when the numerical strength of the army was nearly twice as great.

At Baton Rouge the number of important cases was nearly 300, and the mortality, compared with the previous quarter, seems to have suffered no diminution, 29 in a mean strength of 340 men having fallen under the influence of disease.

By this time Fort Gadsden had been abandoned, and the 7th Infantry having been withdrawn from the swamps of the Flint and Chattahoochee rivers and the ponds around was *en route* towards the frontiers of Louisiana and Arkansas.

At St. Augustine, yellow fever prevailed. From the report of Post Surgeon McMahon, the following extracts are made:

"The streets are very narrow and filthy. The houses, originally crowded and badly constructed, are for the most part in a state of dilapidation. Cleanliness has never been accounted a cardinal virtue by the Spaniards. Hence, the filth and dirt of a century have been suffered to accumulate in every street, lot, or other enclosure.

* * * * * *

"The disease first made its appearance aboard the Schooner Alexander, which arrived at this port from the Havanna some time in the month of August. Whilst she was riding quarantine, the captain and crew died. Hence an opinion was prevalent that the disease was imported by that vessel; but by adverting to the period when the malady manifested itself in the city, and taking into view the fact that the schooner was not permitted to hold any intercourse, direct or indirect, with the land, either before or after the death of the captain and crew, it will be evident that this opinion is not founded in truth."

In the third week of September, several cases of "malignant fever" occurred; but the disease was not recognised as an epidemic until the close of the month. From this period the progress of the malady continued unarrested until the recurrence of frost in the latter part of December.

"Its ravages," continues Dr. McMahon, "were entirely confined to strangers. By this term, I would be understood to designate all persons not inured to the atmosphere of the city by nativity or a residence of a long series of years. Spaniards or natives, resident in the country, who had the temerity to venture into the city during its prevalence, were liable to its attack, though in a milder degree than the emigrants."

Examinations *post mortem* revealed the following appearances: The strongest marks of disorganization were observable in the alimentary canal. The stomach was reduced in size, incipient mortification was manifest, and it contained the peculiar black matter resembling coffee-grounds. Its pyloric portion and the duodenum were effused with black blood. The remainder of the primæ viæ, as well as the lungs, kidneys, spleen, liver, and biliary ducts, presented no organic lesions.

Post Surgeon McCoskry having fallen a victim to the epidemic, he was succeeded by the author of the above extracts, by whom 14 cases were treated, of which four proved fatal. Among the citizens attacked, who were principally Europeans, the mortality was much greater.

In September, according to the reports of the Surgeons, the 7th regiment of Infantry took up the line of march from Fort Scott—a position which had always been rife with disease, the character of which was rendered more fatal by the enfeebled constitutions of the men and their irregular habits. The sick list numbered 154 cases, mostly dysentery, whilst the whole command was much enfeebled by previous disease. Having descended the Appalachicola, and being encamped near its mouth, the troops were much exposed to violent storms of wind and rain, which caused a great augmentation of the sick list. Transportation having at length arrived, the troops embarked for New Orleans in seven sloops and schooners—the sick being stowed away with the other men and the baggage of their companies respectively; and until their arrival at the bayou St. John they were, by this arrangement in most of the vessels, deprived of medical aid. Here the men suffered exceedingly from the quality of the water, which had been put into casks containing the impure lees of wine. The cases of dysentery were consequently much increased in number, and rendered more fatal. At

New Orleans, the sick were put into a house, in which they were exposed to the inclemency of the weather, and suffered equally from confined rooms and the want of fuel. These circumstances, although repeatedly reported by the several medical officers to the commandant, failed to receive the attention so imperiously demanded. The result is calculated to illustrate an important principle in military affairs, viz. that the comfort and transportation of the sick should, on the ground both of humanity and public interest, always engage the anxious solicitude of the commanding officer.

Whilst encamped at this place, the troops suffered again from a storm of four days' continuance, by which the tents were prostrated and the grounds inundated. Divided into two battalions of five companies each, they embarked on the 6th November for their respective destinations. The sick of the detachment for Fort Selden, near Natchitoches, suffered much from exposure to rain; and so enfeebled were the vital energies of these men, that several perished during those nights when the thermometer indicated a sudden decrease of temperature. On the Red river, the boiler of one of the boats exploded, killing three men and injuring several others seriously. Arrived at Alexandria, the lowness of the water prevented the further progress of the boats; but having transferred the baggage to barges, and dragged them over the rocks, the rapids were soon cleared; and on the 17th December the command reached its destination, having been two and a half months on the route. In this debilitated condition, the troops were set to work in repairing the barracks and building an hospital.

The detachment destined for Fort Smith, Arkansas, was also much exposed on the decks of a steamer on the Mississippi, and in open boats on the Arkansas river, and suffered much from the inclemency of the weather.

During the protracted movement of this ill-fated corps, it lost many of its members by disease and casualties; but, as the companies were frequently separated, and no regular reports were made on the march of the number or the manner of the deaths, the aggregate that perished is not accurately known.

The medical history of the 1st and 7th Infantry affords matter for the serious consideration of every military man, and teaches a lesson of experience which ought not to be forgotten by the Executive officers of the Government.

Recruits should not be brought from our northern States and cities to the south in the summer season, and then be put immediately to work building barracks in which to shelter themselves. It is improper, except for some immediate or temporary object, to concentrate a large body of men in the immediate vicinity of swamps, lakes, and lagoons, and equally wrong to hold them there after the experience of a season establishes incontestibly the unhealthfulness of the position.

If troops must occupy unfavorable localities in a southern latitude, they should be divided into small commands; we know from experience that one hundred men may remain comparatively healthy at points where five hundred or one thousand will contract disease; and it is

manifestly against reason to put a body of men in motion for a long journey with one third actually sick, and the remainder just convalescing from disease. Had the troops left Fort Scott in March, instead of the last of September, 1821, the heavy loss by death and the invaliding of the men would have been saved to the country. The movement of masses of men in a crippled condition will invariably be attended with an aggravation of disease and corresponding loss of life.

Numerous widows and orphans to this day mourn the untimely fate of relations and friends who sank under disease during the disastrous movement of the army from Terre aux Bœuf to the highlands of the Mississippi.

In this year, an epidemic bilious fever prevailed in every section of the United States.

1822. The reports of the *first quarter* exhibit a remarkable degree of healthfulness at the military posts generally. The aggregate of deaths was but 54, Baton Rouge even being exempt from its usual degree of mortality.

The total of deaths in the *second quarter* was 41, of which 28 occurred at Baton Rouge, and 22 of these in the month of June. There were, therefore, but 13 fatal cases at all other posts.

The continued prevalence of sickness at Baton Rouge was attributed by the Surgeon to the unceasing and laborious occupations of the men, acting in conjunction with the influence of a long-continued drought and the effects of habitual intemperance. The numerical strength of the command was about 300, and the total cases of disease 421. The prevailing diseases, more especially at the southern and western posts, were intermittent and remittent fever, diarrhœa, and dysentery. At Baton Rouge, there were 81 cases of the two latter, and 122 cases of the two former complaints.

In the *third quarter* there were 75 deaths. Of the cases under treatment, nearly one-half was intermittent and remittent fever, which prevailed to a great and fatal extent in many parts of the country. Of these cases, 540 occurred at Council Bluffs, in a command of nearly 500 men. The causes of this unusual sickness are referred by Surgeon Gale to the annual inundation of the low grounds selected for cultivation. Only one case, however, terminated fatally.

The prevalence of intermittent and remittent fever, in newly settled countries, is a very general occurrence. That a half-cultivated region is more sickly than a wilderness, or a country in the highest state of agricultural improvement, is a fact often remarked by the close observer of nature. In treating of the "Diseases of the early settlers of Ohio," Dr. Hildreth says, "They were sometimes attacked with malignant remittents in the summer, and pneumonias and pleurisies in the winter, but no serious epidemics appeared until partial openings had been made in the primeval forests, and the wet low grounds exposed to the action of a summer sun. Accordingly, we find that a partially cultivated region is more sickly than one which is either totally covered with forests, or in a state of complete redemption." This opinion accords entirely with the general experience of our army surgeons. The hunter, and the wild

borderer, who are the pioneers of the actual settler, suffer less from disease than the latter class. As the hunter and the borderer live like the savages around them, depending for subsistence nearly altogether upon fishing and the chase, their diseases are generally of a simple inflammatory character, arising from the combined influence of hunger, fatigue, and exposure to variable and extreme weather. In this unreclaimed state, the baneful exhalations which arise from the decayed vegetable matter covering the soil, seldom ascend beyond the higher foliage of the trees; but as soon as the permanent settler begins to fell the forest, leaving the branches to undergo decomposition in the heats of summer, and to turn up to the action of the sun the marshy ground, consisting of the accumulated vegetable deposition of years, deleterious agents are exhaled, giving rise to the most malignant epidemics. In the recent Florida campaigns, it is a common observation, that encampments near jungles seldom prove insalubrious, unless the soil is cultivated, or the trees and shrubbery are cut down, thus exposing the boggy surface to the influence of solar action.

Dr. Hildreth also notices the epidemics of 1821–'2–'3, as being of the most fatal character throughout the valley of the Ohio. The epidemic of 1823–'4, varying in its attacks from the mildest intermittents to the most malignant remittents, extended east of the Alleganies through Pennsylvania. The epidemic of 1823, says Dr. Cartwright of Natchez, was probably the most terrible that ever prevailed in the United States.

Dr. Heustis, formerly of the United States army, in some medico-topographical remarks on Alabama, observes, "For the first three years after my arrival in this State, in 1821–'2–'3, the country was dreadfully sickly, and the mortality great and appalling, more especially near the rivers. The whole country was then new, and the warmth and humidity of the seasons caused a great and rapid decomposition in the recently exposed and turned up vegetable matters. Many flourishing towns upon the rivers, which had risen up, as it were, by the hand of enchantment, received a sudden check, and became suddenly almost totally abandoned from death and desertion. Strangers from every part of the United States, invited by the fertility of the soil, the beauty of the country, and the serenity of the climate, brought together by fortuitous association, with foreign and unseasoned constitutions, were suddenly swept off by thousands. In many families there were not well persons sufficient to attend upon the sick and dying. Never have I known a time of such general calamity."

At Fort McHenry, in a garrison of 108 men, there were 62 cases and 2 deaths. Several circumstances are reported which throw some light on the nature of the "bilious cholic," which had prevailed there, for several years, in a very severe form. There were 56 recruits, all of whom were employed on police duty, whilst the old soldiers performed the necessary guard duties. The diet of both was the same. Both were exposed to the high temperature of the day; but the latter were subjected to the additional influence of the damp atmosphere of the night, laden with marsh effluvia. The extent of sickness in these two classes of men, was perhaps equal; but the cases of "bilious cholic" occurred only among the old soldiers, whilst the detachment of recruits

suffered much from intermittent fever. It would seem, then, that the poison, in a certain quantum, produced intermittent fever; and when conjoined with the effects of exposure to night air, the result was "bilious cholic." Between the skin and the liver there exists an intimate and powerful sympathy. In proportion as high atmospheric temperature excites these organs into inordinate functional action, are they rendered susceptible to the impressions of cold and dampness. Assuming, therefore, that both the recruits and old soldiers were equally exposed to the causes of intermittent fever, we are led to the inference that the conjoined influence of exposure to the night air produced a sudden torpor or inactivity of these two important enunctories, causing that group of violent abnormal manifestations, designated "bilious cholic." This view of the subject accords with the appearance of similar affections at other points, and accounts for its unusual prevalence two years previously, when the men were employed in boats. Improper diet and irregular habits were the causes then assigned.

Bilious remittent or yellow fever appeared at Pensacola on the 7th August, and soon extended over the whole city. Between the 13th and 20th of the month, 20 deaths occurred; and on the 26th, the troops abandoned the town and encamped on a dry and elevated position in the vicinity. As some men were necessarily left behind to guard the public property, most of the cases occurred among them. The total number of cases was 52, of which 11 proved fatal—a relative mortality much lower than that among the civil population. The three medical officers, Drs. Elliott, McMahon, and Merrill, were seriously attacked, the first of whom fell a victim to the disease. The following report is from Assistant Surgeon McMahon, whose opinions derive additional importance from the fact that he had witnessed the disease, the previous year, at St. Augustine:—

"Pensacola is situated on the bay of that name, in latitude 30 deg. 29 min. N., and longitude 10 deg. W. It is bounded on the south and east by the bay, on the north by bayou Tacha, and on the west, by the little bayou and an extensive pine barren. A chain of heights, whose maximum elevation does not exceed 60 feet, extends along the rear of the town, and is the source of a never-failing spring, which supplies the inhabitants with water.

"From an attentive examination of its natural position, I am induced to believe that this city holds out a fine prospect for salubrity. Exposed in front to the sea, and sufficiently remote, on every other side, from swamps or large bodies of fresh water, it possesses so much elevation as to have a constant and free ventilation, whilst the soil of the city, as well as of the vicinity, is one unvaried bed of sand, mingled sparsely with a rich vegetable mould.

"The streets are wide and spacious, intersecting each other at right angles. Deprived of pavements and the protecting shade of trees, the sand, by which they are covered to the depth of seven or eight inches, acquires, during four or five months of the year, such an intense degree of heat as to render all attempts at walking abroad, during the day, manifestly dangerous.

"The houses, generally built of wood, are, many of them, in a state of decay. The lots and yards containing the accumulated filth of years, are extremely offensive. The privies being very much neglected, are abominably fetid. The soil of the gardens being in a great measure artificial, vegetation is very productive; and as the leaves and offals are suffered to remain on the surface, decomposition, favored by heat and moisture, rapidly ensues.

"To these prolific sources of miasmata may be added, a total neglect of cleanliness in the personal habits and domestic economy of the inhabitants.

"An unusual degree of heat and moisture during the summer, has tended effectually to bring those exciting causes of disease into operation. It cannot, therefore, be doubted that they were amply sufficient to produce malignant fever in a climate where, during the summer months, an intense degree of heat prevails, and where the average annual quantity of rain that falls is rarely below fifty or sixty inches.

"The first five months of the year were remarkably healthy. The month of June was ushered in by the prevalence of a fatal distemper among brute animals. Its operation was particularly marked upon dogs, foxes, and panthers. The mortality among the two last was, indeed, immense; numbers being found every where dead in the woods. It is somewhat singular that four, five, and six bodies were generally discovered collected about the same spot. During the same period, a general state of mal-aise prevailed amongst the inhabitants, manifesting itself in depression of spirits, loss of appetite, and apathy to every species of exercise and amusement; but no case of fever wearing a bilious or malignant type had as yet occurred. Towards the close of the month, however, a number of cases of bilious remittent fever were observed; but inasmuch as they were found to prevail only amongst the poor and laboring classes and those of dissolute habits, they excited no suspicion of the approaching catastrophe.

"About the first of July, a brig having a cargo of cod-fish, most of them in an unsound or putrid state, arrived from the Havanna. As the captain and crew were in apparent good health, the boarding officer, at the quarantine grounds, permitted her to pass. She lay eight or ten days at anchor before the town, when a remonstrance was made to the board of health by a number of the inhabitants residing on Bay street, representing her as a nuisance of the most noxious character. This served to awaken them, for a moment, to some sense of their duty. An order was issued directing the brig to depart the harbor forthwith; but it was now too late, as the evils against which it intended to guard, had been already committed. The fish, for the most part, had been landed and sold, as the captain phrased it, "for a mere song." Thus a new source of pestilential effluvia was introduced, tending to rouse into action the dormant enemy within the bosom of this ill-fated city.

"July was rendered remarkable by the immense quantity of rain that fell, and by a storm of some days' duration, which prevailed from the southwest, and caused considerable injury to the town and the shipping

along the coast. It may, on the whole, be pronounced a healthy month, as the cases of disease were few and of a mild character.

"The month of August was ushered in by very hot calm weather. On the 7th, a young lady, who had recently arrived from New Orleans, died with the black vomit. Her attending physicians, Drs. Elliott and Bronaugh, had no suspicion of the real character of the disease, until this last fatal harbinger of death made its appearance. About the same time, two other cases of malignant fever occurred in a quarter of the town which had been considered the most healthy. As the symptoms in these cases were very mild in appearance, and as the subject of one was a Spanish lady, long a resident in the climate, the physicians labored under the same delusion as in the first case: both patients died on the 12th with black vomit. On the 13th, the board of health publicly announced the existence of the disease, and warned all the inhabitants able to remove, to retire to the country. At the same time, they ordered the putrid cod-fish to be seized wherever found, and buried without the limits of the city. This order was very imperfectly obeyed; and as the fish had been purchased by persons residing in every quarter of the town, the effluvia hence arising, during the warm still mornings of this month, were intolerable. In addition to this evil, the board caused fires to be kept continually burning in every direction, by which the heat of the atmosphere, already excessive, was redoubled. The pestilence, however, became more rife, and the disease acquired new malignity.

"Between the 13th and 20th, upwards of 20 deaths took place. The disease now spread rapidly, and with a degree of malignity rarely equalled in the annals of this destructive malady. Out of a population of 1,000 souls, upwards of 200 have already become its victims. Neither age, sex, complexion, occupation, or residence, has afforded any exemption from its fatal ravages. The old and the young, the native and the emigrant, the white and the black, have been alike subject to its baleful influence.

"On the 26th the troops evacuated the town. Up to this period, their health remained unusually good. A knowledge of this fact prevented many citizens from retiring, and thus many valuable lives were sacrificed. Believing that this singular exemption of the soldiery was due to their peculiar habits and mode of living, whiskey and salt pork were now considered as prophylactics—and, as might have been anticipated, all those who had recourse to the supposed preventives, fell speedy victims to the disease.

"A scarcity of tents and the want of buildings for the reception of the sick and the public property, rendered it necessary that attendents and a guard should remain in town, to watch over them until convenient sheds were erected for their protection. As soon as this measure was effected, they were removed to the camp; but few, if any, escaped the infection. And here I would offer a tribute of praise to the salubrity of our present encampment, and to the humane and benevolent conduct of the officers, who have invariably promoted every measure, tending to the comfort of the troops and the preservation of their health. In no instance has a case of fever, originating here, fallen under my

notice, and from every other disease, incidental to the season and climate, we are equally exempt.

"It will be seen, on reference to the quarterly report, that out of 36 cases of malignant fever contracted by the troops, only ten have died. This mortality, compared with that in town, presents a very low ratio. Among its first victims was Dr. Elliott, an officer whose loss cannot be too much regretted; his amenity of manners and correctness of conduct entitle him to the lasting esteem of all who knew him.

"The general symptoms of this disease are marked by a near resemblance to those observed last year at St. Augustine; such as, weariness, restlessness, loss of appetite, excruciating pains in the head and back, turgescence of the vessels of the eye, and in some cases a watery suffusion and a wild stare painful to the beholder, obstinate costiveness, tongue covered with a dark fur with its edges very red and swollen, the thirst excessive, and the skin hot, dry, and constricted. In most instances, violent arterial action, indicating the use of active depleting measures, attends.

"These symptoms constitute the first stage of the disease, and, if not speedily removed, are followed by others of a most alarming character. The pulse sinks rapidly; the skin becomes cold; the patient experiences an indescribable sense of weight and oppression about the prœcordia; violent gastric irritability supervenes; and tremors of the limbs and fainting fits occur, whenever the patient attempts to rise or go to stool. Delirium succeeds, and if not speedily arrested, the patient complains of a sense of heaviness in his head, as if it were about to fall from his shoulders by its own weight. A burning sensation is next experienced in the thoracic and abdominal regions; the tongue becomes covered with a yellowish black sordes; the stools are liquid and dark green, mixed with floculi of a deep brown color; and the urine is small in quantity and passed with great difficulty. The patient now becomes alarmed; he catches hold and endeavors to detain every person that approaches his bed-side; the weight of clothes, even that of a sheet, becomes intolerable; the stools are involuntary, and assume a dark grumous appearance. The patient complains of a sense of choking, or constriction in the superior region of the larynx, to which point he refers the whole of his disease. Cold, clammy sweats next ensue; the pulse becomes imperceptible at the wrist; then follow subsultus tendinum, singultus, convulsions, and hœmorrhage from the mouth, nose, eyes, and ears, and in some cases from the extremities of the toes and fingers—the immediate precursors of death; and finally, black vomit, that ever fatal symptom, puts a period to the patient's sufferings.

"Only one case of recovery, after the secondary train of symptoms had set in, has fallen under my notice. The first twelve hours are in general decisive of the patient's fate. If prominent symptoms are not then relieved by active depleting measures, all hopes of recovery may be abandoned. Gastric irritability, continual watchfulness, dread of approaching dissolution, and sinking of the powers of life, succeed one another with such rapidity that the patient soon succumbs under their accumulated weight."

At the Barrancas there were 9 deaths, of which 7 arose from bilious remittent fever. The report from Baton Rouge presents the usual mortality; the average strength of the command was 245, the total number of cases 281, and the deaths 29. Of intermittent fever there were 101 cases, and of remittent 45. The post at St. Marks was very healthy from the beginning of the year until August, when bilious fever of the remittent type made its appearance. The total of cases was 68, and the deaths but 5. The local or exciting causes were not dissimilar from those in operation at Pensacola. The causes enumerated by Assistant Surgeon Stevenson, are as follows: the unusual low tides, by which a large quantity of putrid vegetable and animal matter was exposed to the action of the sun; the prevalence of east winds, coming over an extensive marshy country; and the general failure of summer vegetables, which are very essential to the maintenance of health in warm climates. To these exciting causes must be added the more important and essential one, viz. the peculiar general constitution of the atmosphere, (*constitutio aëris*,) indicated by the simultaneous prevalence of remittent and bilious fevers in every district of the United States. As these local causes are found in other places and in other seasons to a much greater extent without producing similar effects, it is obvious that some peculiar meteorological condition of the atmosphere is essential to give potency to these morbific agents. A fact in regard to the brute creation, observed in the black death of the 14th century, and in many other epidemics, has been noticed in the report of Dr. McMahon. Like the Grecian plague before Troy,

> "On mules and dogs th' infection first began,
> And last the vengeful arrows fixed on man."

As animal decomposition is regarded by many as innoxious, the agency ascribed by the same medical officer to the putrid fish at Pensacola, as "a new source of pestilential effluvia," will be doubted by this class of reasoners. There seems to be, however, pretty strong evidence in favor of the affirmative. Yellow fever was clearly traced to the very same source, as an exciting cause, in Newburyport in 1796, and in New London in 1798. That putrid oysters in the shell, and hides in a state of putrifaction, exert the same agency, has been often strenuously maintained.

The north-western posts, and those along the eastern coast, generally require but little comment. At Prairie du Chien, the diseases arising from the general epidemic constitution of the atmosphere, assumed chiefly a dysenteric form, followed by intermittent fever. At the Sault St. Marie, diarrhœa was the only disease of any consequence: and at Saguina Bay, intermittents and remittents prevailed.

The aggregate of deaths, reported this quarter, was but 65—a mortality which, when we consider the extent and fatal character of diseases in general during the summer, was very low; and which, at the same time, afforded a practical comment on the efficiency of the medical corps of the army.

The following case of *ileus*, which occurred in the hospital at St. Marks, under the care of Assistant Surgeon Stevenson, is replete with interest:

On the 11th July, a private soldier of the 4th regiment of Artillery was reported sick with the usual symptoms of spasmodic cholic. The ordinary remedies were employed, but the stomach rejected every thing; whilst the bowels continued, for three days, obstinately constipated. On the evening of the 12th, the patient had stercoraceous discharges from the stomach, attended with cold sweats and a small weak pulse. Venesection, blisters, and enemata, were used without any abatement of the alarming symptoms, until the evening of the 15th, when he had a copious and fetid alvine evacuation. On the morning of the 16th, he discharged *per anum* a portion of the small intestine, 6¾ inches in length. As the calibre, thickness, and texture of this organized substance precluded the possibility of mistake, the inference is obvious, that the invaginated portion had become gangrenous and sloughed off. The patient recovered his health slowly, and on the 23d of July returned to quarters. On the 14th August he was attacked by the prevailing epidemic, and on the 18th he died. It is a matter of serious regret that the state of the medical officer's health was such as to render him unable to make an autopsic examination.

During the *fourth quarter*, the total mortality of the army was 42. Of these, 15 occurred at Baton Rouge, the strength of the command being 238, and the number of cases 276. The prevailing disorders were diarrhœa, dysentery, and fever of the intermittent and remittent type. At Fort San Carlos de Barrancas, 12 died of malignant fever out of 24 cases. The strength of the command varied from 90 to 300 men, and the total of cases under treatment was 66. "The cases which proved fatal," says Dr. Bell, "generally terminated on the third, fourth, or fifth day, the patient having sunk into a typhoid state, accompanied by a vomiting of black matter resembling coffee-grounds." At Pensacola, there was one death from the same disease. The following report of Dr. McMahon is a continuation of his remarks given in the preceding quarter:

"Since the first part of this report was transmitted, the malignant fever continued, but with diminished violence, until the 27th of November, when the occurrence of a severe frost put a final stop to its ravages.

"From the observations made during the past and present season upon this disease, I conceive it impracticable to lay down or pursue any regular mode of treatment. At St. Augustine, for instance, the employment of the lancet or mercurial preparations was invariably accompanied by fatal results; whereas at Pensacola the reverse took place. It has frequently happened that similar remedial means, employed under apparently similar circumstances, have often produced, at the two places, various and opposite effects. Carefully to watch its approach and progress, and to combat and obviate symptoms, was the '*unica et ultima regula*,' which I observed in the management of this insidious malady."

Before and after the 9th of October, the disease presented a character diametrically opposite. Prior to the above period, there was an excess of arterial action requiring a free and liberal use of the lancet; but subsequently, the vital powers manifested such a loss of energy that the strongest stimulants were imperiously demanded. The disease, at this

period, ran its course in 18 or 24 hours, and if stimuli were not exhibited on the first indication of an attack, the patient's fate was irrecoverably sealed.

The aggregate of deaths from all the other military posts, during this quarter, was but 11. At Council Bluffs there were 428 cases, but none proved fatal. At Fort McHenry, cases of "bilious cholic" were still reported; and at Fort Severn, also, it continued to prevail. No case, however, resulted fatally.

In the *first quarter*, the mortality of the army, according to the medical returns, amounted to 35. Of these deaths, 13 occurred
1823. at Baton Rouge, at which point dysentery and intermittent fever were as rife as usual.

During the *second quarter*, the aggregate mortality was 50, Baton Rouge having furnished 29 fatal cases. In the corresponding quarter of the prior year, the total of deaths was 41, of which 28 were reported at Baton Rouge. The garrison now consisted of about 400 men, of whom three-fourths were recruits. The continued prevalence of disease is ascribed by the Surgeon, as in former reports, to the operation of the following causes: 1. Intemperance; 2. Severe fatigue duty; and, 3. The consequent exposure, especially among the recruits who were unacclimated. These causes, in conjunction with the change of diet, and other habits to which a recruit is necessarily subjected, are regarded by Surgeon Harney as adequate to the explanation of the extent and fatality of diseases.

In the *third* quarter, the deaths numbered 53. Of these, 24 occurred at Fort Smith, (Arkansas Territory,) 6 at Council Bluffs, (Missouri,) and 3 at Saguina Bay, (Michigan,) leaving the small mortality of 20 at all other posts. It may be worthy of remark that Baton Rouge, during the summer, was occupied by very few men. At most of the southern and western stations, intermittent and remittent fevers were the prevailing maladies. At Fort Smith, the endemic assumed all the manifestations of a high grade of yellow fever; but, fortunately, its fatality was limited to a very short period. The strength of the command was 200, and the total of cases, during the quarter, was 277. The subjoined report is from Assistant Surgeon (now Surgeon) C. A. Finley.

"FORT SMITH, *October* 15, 1823.

"SIR: From the accompanying report of the quarter ending the 30th September, you will observe that the mortality of this post has been unusually and alarmingly great. Prior to the 5th of September, our diseases did not assume a character calculated to excite any anxiety, but were such as we anticipated in this season and climate. About the period just named, the fever became more rife, and manifested a violent grade of action. When first attacked, the patient complained of slight chilliness, which was soon succeeded by fever, general pains, most severe in the head and loins, and excessive irritability of the stomach, attended with continued vomiting and excrutiating pain in the same region. Although the application of a blister invariably relieved the pain, it had not the effect of arresting the vomiting, which only ceased with death. The matter discharged from the stomach was black, and had

the appearance of clotted blood. The pulse was quick and soft, and the eyes were red and painful. After the first 12 or 18 hours, delirium ensued; the tongue became black, rough, and dry; the thirst, owing to the irritability of the stomach, was unquenchable; and finally, comœ and convulsions announced the approach of death.

"In the treatment, I adopted, after giving an emetic and brisk purgative, the mercurial plan; but this was not attended with much success, until, after some experience, I premised the cold shower bath. The disease now yielded, nor did I lose a case in which the bath was used within the first twelve hours."

During the *last quarter*, intermittent fever, diarrhœa, and bronchial affections, were the maladies most rife. The aggregate mortality was 56, of which 13 were reported at Baton Rouge. It is to be regretted that we have not more detailed accounts in reference to the medical topography of this station. In the quarterly report, we are informed merely that "the post has been garrisoned by four companies, and about 40 prisoners; the latter are generally very sickly, and almost without pay or clothing." At Tybee Island, near Savannah, the whole command, including women and children, were attacked with "autumnal fever." The number of men present was 41, of whom nine died, and eight or ten were rendered nearly unfit for service.

1824. In the *first quarter*, the aggregate mortality was but 23. No disease exhibited any peculiarities demanding comment. At Baton Rouge, five recruits from the north died.

The *second quarter* presents a total of 30 deaths. At Baton Rouge there were eight fatal cases, but the causes from which they arose are not specified. At Petite Coquille, the cases of bilious fever were pretty numerous, of which one only proved fatal. The medical officer reports that "the weather during this quarter has been unusually hot, no rain having fallen for the last six weeks. The marshes which environ us on every side are no longer covered with water; and the exhalations from them at night are intolerably fetid. To these causes, in conjunction with the unfitness of the buildings occupied as barracks, may be attributed the occurrence of so many violent cases of bilious inflammatory and remittent fever." Amongst the causes of disease enumerated by surgeons stationed at southern posts, reference is frequently made to the circumstance of troops from the north being sent to that climate at improper seasons.

During the *third quarter*, the mortality was unusually low, the aggregate of deaths being but 35. The garrison of Fort Mifflin, as in the summer months of former years, suffered severely from febrile affections of an intermittent and remittent type; but no case terminated fatally.

There are 35 cases of opthalmia reported, some of which were marked by a very high grade of inflammatory action. The unusual prevalence of this disease was generally ascribed to the peculiar form of the forage-cap worn by the soldiers.

At Fort Moultrie, Charleston Harbor, 12 cases of yellow fever appeared. The strength of the command was 70; and although the mortality was very great in the city and its vicinity, no fatal case occurred

among the soldiery. This immunity from the epidemic must, in a great measure, be attributed to the timely precaution of Assistant Surgeon Richard Randall, by whose advice the troops were removed to the sand-beach on the opposite end of the island. The day after the removal, there were brought to the hospital two new cases, which proved to be the last. "The disease has been treated," says Dr. R., "in my practice by pretty free depletion, mild mercurials, and active cathartics; and my greater success warrants me in believing that it is a better plan of treatment than the exclusively mercurial one, which is generally pursued by the physicians of Carolina." At Pensacola, there were two deaths from yellow fever reported. The diseases at all other posts were so entirely free from peculiarity as to require no comment. The stations on our northwestern frontier, the northern chain of lakes, and the Atlantic sea-board north of Philadelphia, have as yet, indeed, called for little notice.

Among the diseases of the *last quarter* of the year, the principal were intermittent fever, diarrhœa, dysentery, and the usual inflammatory affections of the season. In Charleston harbor, in a command of 90 men, 15 cases of yellow fever occurred, two of which terminated fatally. Opthalmic affections still continued to prevail, 35 cases having been reported for the quarter; and, during the year, several men were discharged the service in consequence of loss of vision. A special report on this subject having been made to the War Department by the Surgeon General, certain alterations in the shape of the forage cap were directed; and as there were but three cases of opthalmia reported in the succeeding quarter, the presumed cause was inferred to be the legitimate one. As these affections, however, became year after year more rife, it affords another evidence of the difficulty and uncertainty of medical causation. Our knowledge of cause and effect in regard to a succession of events, is founded entirely on the observation of a uniform sequence in the phenomena; and to assign to these successive events the relation of uniform sequence, is often a step of the utmost perplexity in every department of science. In the prosecution of medical investigations, this is more especially apparent in our efforts to determine the effects of external agents as causes of morbid action, the effects of external agents as therapeutic means, and the connexion of certain functional and organic lesions of internal organs with certain external expressions or signs of disease.

The aggregate mortality of the quarter was 34. At Baton Rouge the mean strength was 137, and out of 117 cases there were nine deaths; but in regard to the character of the prevailing diseases, or the causes of their continuance, the report furnishes no information.

As a general conclusion from the reports of the whole year, it appears that the mortality was owing chiefly to diseases arising from the influence of causes, with the exception of ardent spirits, beyond the control of man; whilst those diseases which depend more particularly upon police and discipline, as typhus fever, diarrhœa, and dysentery, have been neither numerous nor fatal. The fact that but seven deaths occurred from the latter complaints during the year, affords presumptive evidence that these important points of duty were rigidly enforced.

The annual aggregate mortality was 122. Among the causes of death the abuse of spirituous liquors holds a prominent rank. To this pest of the army forty deaths may be traced, under the different forms of liver disease, dropsy, apoplexy, &c. To suppress this growing evil, Dr. Lovell, with laudable zeal, ceased not to urge upon the Secretary of War the necessity of abolishing the use of whiskey among the troops, or of supplying a less deleterious substitute. He maintained that it was the cause, not only of many of the irregularities of service, but of vast expense to the public treasury by the increase of the sick-list, and by premature deaths and discharges. In consequence of incurable diseases proceeding mainly from this cause, 108 were discharged, during the previous year, from the hospitals alone.

As the post at Baton Rouge has demanded comment in every quarterly report, an abstract of the last six years may afford interesting results. The mortality of the 1st regiment of Infantry at this post is, doubtless, higher than that of any other regiment since the organization of our Government. To ascertain the exact ratio it was necessary, as the condensed records kept in the Adjutant General's Office at that period could not furnish all the essential data, to collect the information from musty regimental returns. Although some of these files are now imperfect, yet I had the good fortune to find, with one exception, all the monthly returns of the 1st regiment of Infantry at Baton Rouge complete.

ABSTRACT showing the annual ratio of mortality, per centum, *of the 1st regiment of Infantry at Baton Rouge, from* 1819 *to* 1824 *inclusive.*

MONTHS.	1819		1820		1821		1822		1823		1824	
	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.
January - -	173	1	301	5	410	4	381	5	318	2	123	3
February - -	166	0	293	3	416	4	381	5	346	6	134	2
March - -	203	1	280	2	397	4	360	2	394	4	134	0
April - -	189	1	273	2	335	3	376	5	395	6	153	2
May - - -	251	5	271	1	328	2	350	5	384	12	153	0
June - - -	253	6	346	3	462	11	315	20	431	8	152	2
July - - -	285	1	408	11	291	9	307	8	479	6	136	1
August - -	286	3	396	6	271	11	301	12	*		133	5
September - -	212	5	381	12	300	7	295	9	141	0	133	0
October - -	187	4	368	16	213	10	293	2	130	5	133	0
November - -	191	1	385	10	400	11	299	6	123	3	125	0
December - -	333	1	408	5	407	5	292	6	123	3	154	9
Total - - -	2729	29	4110	76	4230	81	3950	85	3264	55	1663	24
Mean strength and annual ratio of Deaths *per cent.*	227	12.8	342	22.2	352	23.0	329	25.8	297	18.5	139	17.3

* Six companies are reported at Camp Clark near St. Louis, but of the position of the other four companies there is no record.

ABSTRACT exhibiting the deaths, and the number of cases under treatment, during the same period.

YEARS.	Mean strength per Adjutant General's returns.	Cases treated per Medical returns.	Deaths per Adjutant General's returns.	Ratio per 1000 mean strength.	
				Treated.	Died.
1819	227	– *	29	–	128
1820	342	1878	76	5.492	222
1821	352	2041	81	5.798	230
1822	329	1420	85	4.322	258
1823	297	1090	55	3.670	185
1824	139	514	24	3.698	173
Total	1686	6943	350	–	–
Average	281	1389	58	4.596	208

* No report.

It appears, then, that the ratio of mortality, on an average of six years, is nearly 21 *per cent.*, a result unprecedented in our military annals. In 1822, the most fatal year, the mean was nearly 26 *per cent.* As there were, among every 1,000 men, 4596 cases under treatment in the course of the year, it follows that every man, on an average, must have been on the sick list once in every two months and nineteen days.

It is deemed unnecessary to extend these remarks, as the medical history of the regiment has been developed at every step of our progress. The question, why the post was not abandoned or a new system of internal economy adopted, is doubtless suggested to every mind. It were useless, at this late day, to inquire into the motives that influenced our public councils. Suffice it to say, that the late Surgeon General, in a report to the Secretary of War, as early as November, 1821, uses the following language: "The duties required of the soldiery at this post, since the commencement of the public works, have not only been laborious and severe in the extreme, but *inhuman and unjust.* The number of cases treated, the deaths, and desertions, will, I think, conclusively prove how impolitic have been the measures pursued. It also appears that, whilst the mortality amongst the troops has been so great, the citizens in the vicinity are quite healthy."

1825. The *first quarter* of this year was remarkably healthy. The aggregate mortality was 31, of which seven arose directly from intemperance, and the same number from phthisis pulmonalis, leaving but 17 from all other diseases.

In the *second quarter*, the aggregate of deaths was still lower, being but 24. Notwithstanding the change in the forage cap, alluded to in the previous year, 67 cases of opthalmia are reported this quarter, and 58 in the succeeding one.

In the *third quarter* there were 46 deaths. The stations along our northern Atlantic coast were healthy, with the exception of Fort Constitution at Portsmouth. Nearly the whole garrison was attacked with

cholic and cholera morbus, but no case terminated fatally. At Fort Delaware, nearly every man suffered from diarrhœa and intermittent and bilious remittent fever. In connexion with the heat and dryness of the season, Assistant Surgeon S. B. Smith mentions, among the accidental causes, the intemperance of the soldiery, who were employed all summer in enlarging the *fossé* surrounding the fort; and as the bottom consisted of soft alluvial matter, he ascribes the prevalence of the febrile affections, in a great measure, to its agency.

The company stationed at Fort McHenry, in consequence of the insalubrity of the position during the summer months, encamped, as had been found necessary for several years previously, about two miles from Baltimore; and in this position the troops enjoyed good health. At Fortress Monroe, fevers of the intermittent and remittent type, as well as typhus, prevailed extensively; but two cases, however, proved fatal, the result of the last named disease. At Fort Moultrie, the ratio of sickness was also very high; for, among 90 men present, there were reported 46 cases of cholic, dysentery, and bilious fever; but one case, however, terminated fatally.

At Bellona Arsenal, near Richmond, intermittent and remittent fever prevailed, as usual, to a great extent. Although the fatal cases were few in number, nearly all were attacked, and recovery was exceedingly slow in consequence of relapses. The locality being regarded very insalubrious, it was recommended that the troops form an encampment, a few miles from the post, during the summer months. The good effects experienced from this measure at Fort McHenry, and the partial advantage at the arsenal near Augusta, Ga., were urged in its favour.

At Savannah, the troops, since their removal from Tybee island, were more healthy. The diseases to which they were now exposed, are attributed to the rice fields in the immediate vicinity of the barracks.

At Augusta, all the garrison suffered from the "country fever," except two men; and even on the 31st December, very few were fit for duty. The only advantage derived from encamping on the "sand hills," during the summer months, was, that fewer cases proved fatal and relapses were less frequent. The liability to disease seems not to have been diminished; for, as it was necessary to keep a guard at the arsenal, (then situated on the Savannah,) the men were in turn exposed to this miasmatic atmosphere; and nearly every case of a severe character occurred among those relieved from this duty. "So long as a company," says the Surgeon General, "is kept at this place, no means, it is believed, can be adopted to prevent an annual visitation of fatal disease, and the number of cases seems only to be limited by the number of men present."

On the 15th July, yellow fever appeared at New Orleans. Among the troops stationed there, three cases occurred, all of which terminated favourably. On the 1st of August the whole detachment moved to Baton Rouge, in which position it continued, in general good health, until the subsidence of the disease at New Orleans.

In a mean strength of 265 at cantonment Gibson, there were in September 114 on the sick-list. The prevailing maladies were dysen-

tery and intermittent fever. There was one death from epilepsy, and among 9 cases of typhus fever, 8 terminated fatally. Typhus, properly so called, it may be well to remark, is a comparatively rare disease in our abundant country. Remittent fever, assuming in its progress a typhoid type, is doubtless often reported under the name of typhus fever.

On the Missouri, Upper Mississippi, and the Lakes, although many of the troops suffered from enteritic affections and intermittent fever, there were but six deaths. At Detroit, although the position is salubrious, most of the soldiers were sick during the present quarter. This arose from the circumstance of their being employed in cutting a road near the River Rouge, a result usually attending such details. The strength was 77, the total of cases 76, and of deaths 4.

The aggregate of cases during the summer was unusually great; but the ratio of mortality, with the exception of that of cantonment Gibson, was comparatively low. "This fact affords," says the Surgeon General, "presumptive evidence that the officers of the medical staff continue to merit their well-earned reputation for professional skill and attention to duty."

In the *last quarter* there were 53 deaths. No reports were received from Savannah and Petite Coquille, private physicians having been employed at those posts. At cantonment Gibson, nine deaths occurred—four from dysentery, two of apoplexy, and three of typhus fever. The strength was 249, and there were for some time upwards of 100 on the sick list. At Augusta, the whole command still suffered severely from bilious remittent fever; the average strength was 27, the total of cases 31, and of deaths 7. At New Orleans, there were 51 cases of varioloid, of which six proved fatal. In the southern and western States, this disease prevailed to a considerable extent, and with more than its usual fatality. The detachment of the 1st regiment of Infantry, stationed in the Creek Nation, was also much afflicted. All the other posts were happily exempt from more than ordinary sickness.

The following remarks are extracted from a special report made by the late Surgeon General to the Hon. James Barbour, Secretary of War, on the subject of a contemplated exchange of posts between the 1st and 4th regiments of Artillery. It may not be amiss to say, that the experience of later years, when it has not been unusual to transport troops, at all seasons, from the Canada frontier to our southern borders, and *vice versa*, does not warrant to their full extent the apprehensions entertained. It is, however, observed by Dr. Lovell, "that the change, it is believed, will not materially affect the health of the troops, unless the season should prove a sickly one."

The remarks are as follows: "From the reports of surgeons stationed from Charleston to Baton Rouge, it appears that whenever detachments have arrived from the eastern or middle States, nearly every man has been attacked, during the first summer, with the diseases peculiar to the country; and that two-thirds of the cases of severe sickness occurred among those unaccustomed to the climate. Even at St. Augustine, which is one of the healthiest posts, disease prevails on the arrival of a new detachment, and is for the most part confined to it. This effect is

more especially to be expected at the arsenal near Augusta, at Savannah, and Fort St. Philip. During the last year, which was by no means a sickly one, every man, with the exception of two, stationed at the first named place, was severely attacked with the autumnal fever. There were seven deaths, including the Surgeon and Quartermaster; and at the close of the year, very few of those that escaped were fit for duty. The same complaint prevails annually at Fort St. Philip to a great extent, but it is seldom as fatal as at Augusta.

"From these facts, in connexion with the well-known effects of a southern climate on northern constitutions, it is to be presumed that the exchange between the 2d and 4th regiments of Artillery will be followed by a considerable increase of sickness during the first year, and especially at the three posts above mentioned; and from the concurrent testimony of all who have attended to the subject, there can be no doubt that the period at which the movement is made is of essential importance. That it should be as late as possible in the fall of the year, is evident from the fact, that even natives of those parts of our southern country subject to autumnal fevers, find it necessary, after an absence of a year or two, to return at this period. If the exchange be made in the spring, it would bring the northern regiment to their posts precisely at the time when they would be most exposed to the debilitating effects of the climate. With systems under the influence of the elastic and bracing air of a long and pretty severe winter, they would arrive at their stations just about the time when the more variable and less oppressive heat of the spring is yielding to the settled and high temperature of summer. They must, therefore, become eminently disqualified, during the months of June and July, to resist the fatal endemics of August and September. Were the 4th regiment, however, to leave their posts in the fall, and relieve the 2d, so as to bring them to their stations about October and November, they would be in a measure prepared to withstand the diseases of the succeeding year. This subject has been frequently mentioned in former reports, in consequence of the representations of surgeons, showing the bad effects of sending recruits, at an improper season, to the southern stations."

The Florida war, as will be shown hereafter, has had no material effect upon the annual ratio of mortality. The mean mortality of the whole army for 1836–'7–'8, ascertained from monthly regimental returns, is but a fraction higher than the average of 10 years, (from 1829 to 1838 inclusive,) the former being 4.8 and the latter 4.4 *per centum;* and is lower than the respective ratios of 1832–'4–'5. Here, then, is a fair exhibition of the consequences of successive Indian campaigns conjoined with the effects resulting from change of climate.

In concluding the observations of this year, I shall present several tabular abstracts, compiled from a report showing the number of deaths and desertions in the army for three years, made to Congress by Adjutant General Roger Jones in the winter of 1825–'6.

The following table exhibits the annual strength and the number of deaths in each regiment, for the three years terminating respectively on the 30th September, 1823–'4–'5:

TABLE exhibiting the annual strength and the number of deaths in each Regiment, for the three years terminating respectively on the 30th of September, 1833–'4–'5.

YEARS.	1st Art'y.		2d Art'y.		3d Art'y.		4th Art'y.		1st Inf'y.		2d Inf'y.		3d Inf'y.		4th Inf'y.		5th Inf'y.		6th Inf'y.		7th Inf'y.	
	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.
1823	486	6	456	6	476	21	439	25	502	56	427	8	375	11	323	11	436	4	379	20	468	31
1824	480	11	485	14	479	27	467	24	498	47	485	7	484	12	408	12	510	12	423	16	432	10
1825	473	12	468	12	480	21	444	29	487	38	507	11	421	5	440	19	388	10	502	6	492	13
Total,	1439	29	1409	32	1435	69	1350	78	1487	141	1419	26	1280	28	1171	42	1334	26	1304	42	1392	54

TABLE showing the annual ratio of mortality in each Regiment, according to the preceding abstract.

Regiments.	Strength.	Deaths.	Ratio of deaths per 1000 of mean strength.
1st Artillery,	1439	29	20
2d do	1409	32	23
3d do	1435	69	48
4th do	1350	78	58
1st Infantry,	1487	141	95
2d do	1519	26	17
3d do	1280	28	22
4th do	1171	42	36
5th do	1334	26	19
6th do	1304	42	32
7th do	1392	54	39
Total - -	15120	567	–
Average -	–	–	37.5

TABLE showing the relative annual ratio of mortality between the North and the South, taking the latitude of Washington as the line of division.

Years.	North.			South.		
	Strength.	Deaths.	Ratio of deaths per 1000 of mean strength.	Strength.	Deaths.	Ratio of deaths per 1000 of mean strength.
1823	2609	58	22	2158	141	65
1824	2687	71	26	2464	121	49
1825	2797	61	22	2537	115	45
Total -	8093	190	–	7159	377	–
Average	2698	60	23	2386	126	53

From this calculation it appears, that the annual ratio of mortality for three years, in our southern latitudes, is $5\frac{3}{10}$, and in our northern but $2\frac{3}{10}$ *per cent.* On reference to the table showing the mortality of each regiment, it will be seen, that the lowest is $1\frac{7}{10}$, and the highest $9\frac{6}{10}$ *per cent.*, whilst the mean of the whole is $3\frac{7}{10}$.* The lowest ratio is that of

* This ratio is lower than that of the ten years terminating with 1838, being 4 and four-tenths per cent. The mortality of the four years ending with 1822 is, however, considerably higher.

the 2d Infantry, which served at Sackett's Harbor, Fort Niagara, and Fort Brady, or the Sault St. Marie; and the highest is that of the 1st Infantry, stationed at Baton Rouge, New Orleans, Fort St. Philip, Camp Clark, and Belle Fontaine. The mortality of that portion of the 1st Infantry stationed at Baton Rouge, it has been already seen, presented, on an average of six years, a mean of nearly 21 per centum. After the 2d Infantry, on the scale of increasing mortality, come successively the 5th Infantry, ($1\frac{5}{10}$ *per cent.*) which served at Forts Armstrong, Snelling, Crawford, and Edwards; the 1st Artillery, (2 *per cent.*) stationed at Forts Sullivan, Preble, Wolcott, Constitution, Independence, Trumbull, Diamond, Columbus, and La Fayette; the 3d Infantry, ($2\frac{3}{10}$ *per cent.*) at Detroit and Saginaw, and Forts Howard, Dearborn, and Mackinac; the 2d Artillery ($2\frac{5}{10}$ *per cent.*) at Detroit, Plattsburg, Watervliet, West Point, and Pittsburgh, and Forts Mackinac, Niagara, Mifflin, McHenry, La Fayette, Columbus, and Delaware: the 6th Infantry, ($3\frac{3}{10}$ *per cent.*) at Fort Atkinson, which exhibits much the highest mortality in the northern division; the 4th Infantry, ($3\frac{6}{10}$ *per cent.*) at New Orleans, Dauphin Island, Galver Spring, and the Barrancas, and cantonments Clinch, Brooke, and Hope; the 7th Infantry, ($3\frac{9}{10}$ per cent.) at Fort Smith and on Red river, and cantonments Jesup, Gibson, Taylor, and Towson; the 3d Artillery, ($4\frac{3}{10}$ per cent.) at Forts Severn, Washington, Nelson, Norfolk, Johnson, and Moultrie, and Bellona and Augusta Arsenals; and the 4th Artillery, ($5\frac{5}{10}$ per cent.) stationed at St. Augustine, the Barrancas, Tybee Barracks, Savannah, Petite Coquille, Augusta Arsenal, and Forts Moultrie and St. Philip.

As M. Carnot, who was deeply skilled in the art of war, was wont, in making a comparative list of eminent French Generals, to place opposite an illustrious name the remark—"*he is well acquainted with the map;*" so in the case before us, it is only he who has studied well the topography of our country that can fully appreciate the foregoing observations. Having once attained a correct and detailed knowledge of the relative influence of various chains of localities, he will invariably find that, in proportion as he prosecutes his investigations, will his principles be confirmed by a succession of similar results.

The following table, embracing a period of four years, which terminate respectively on the 30th September, is also compiled from the records in the Adjutant General's Office. Having taken the latitude of Washington as the line of division, it will serve to elucidate still further the relative mortality of the north and the south:

TABLE showing the relative mortality between the North and the South, embracing a period of four years, which terminate respectively on the 30th of September, the latitude of Washington being taken as the line of division.

Northern Stations.	1822		1823		1824		1825		Southern Stations.	1822		1823		1824		1825	
	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.		Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.
Fort Sullivan	49	3	59	0	54	1	50	1	Fort Washington	52	5	56	0	60	2	51	5
Preble	45	3	60	1	47	0	44	1	Norfolk Harbor	93	3	49	2	50	2	–	–
Constitution	43	0	50	0	50	0	51	0	Fort Johnston	45	6	69	3	64	2	61	0
Independence	100	2	112	1	125	1	123	7	Charleston Harbor	65	1	118	8	87	7	97	0
Wolcott	45	0	50	0	52	2	44	2	Fortress Monroe	–	–	52	1	585	5	587	15
Trumbull	43	0	52	2	56	2	56	0	Savannah	37	2	–	–	56	4	35	6
Columbus	91	1	139	0	61	3	50	2	Tybee Barracks	–	–	47	4	46	4	–	–
La Fayette	–	–	42	1	57	1	48	3	Fernandina	40	2	–	–	–	–	–	–
West Point	49	2	59	1	63	1	50	2	St. Augustine	76	23	110	3	107	7	109	3
Watervliet Arsenal	42	2	58	0	–	–	–	–	Arsenal Augusta	37	5	60	6	44	4	27	0
Plattsburg	56	1	60	64	–	–	–	–	Bellona	35	5	62	3	51	2	54	3
Fort Mifflin	48	0	55	0	–	–	–	–	7th Infantry *en route* to								
Severn	48	1	43	2	58	4	52	3	Red river	203	13	–	–	–	–	–	–
McHenry	46	2	51	1	40	2	51	0	St. Marks	98	5	47	1	43	1	–	–
Delaware	–	–	–	–	52	–	51	1	Pensacola	430	51	–	–	–	–	–	–
Allegany Arsenal	39	2	56	2	59	2	55	3	Barrancas	–	–	156	12	96	2	–	–
Madison Barracks	359	6	190	6	169	2	202	5	Cantonment Clinch	–	–	323	18	119	5	199	12
Fort Niagara	40	1	40	1	51	3	53	0	Brooke	–	–	–	–	207	2	186	2
Shelby	48	1	46	1	76	1	77	4	Mobile	41	4	–	–	–	–	–	–
Saginaw	–	–	94	3	53	2	–	–	Petite Coquille	35	0	57	1	45	4	51	2
Dearborn	87	1	95	3	–	–	–	–	Fort St. Philip	46	4	36	2	88	8	49	6
Mackinac	54	0	58	1	55	2	50	4	New Orleans	–	–	–	–	93	2	105	4
Brady	100	1	237	–	265	2	200	2	Baton Rouge	275	94	141	65	181	24	237	10

Howard	327	9	223	6	353	3	344	2	Fort Smith	205	47	218	5	95	4	–	–
Crawford	76	3	95	0	89	0	58	0	Cantonment Jesup	186	5	199	3	162	3	127	6
Snelling	310	4	251	1	335	1	246	5	Gibson	–	–	–	–	150	0	261	6
Armstrong	51	1	47	0	86	1	79	0	Towson	–	–	–	–	96	4	103	0
Edwards	96	0	43	1	45	2	–	–	Belle Fontaine	–	–	326	1	213	5	–	–
Atkinson	451	6	379	17	423	10	694	8	Fort Wayne	–	–	46	1	–	–	–	–
									Cantonment Robinson*	–	–	–	–	–	6	–	1
									Plaquemine	–	–	–	–	–	–	–	2
									Camp Morgan	–	–	–	–	–	–	–	7
									Princeton	–	–	–	–	–	–	–	1
Total	2743	52	2739	55	2774	48	2728	55	Total	1999	275	2172	139	2738	109	2339	91

* As this command and the following ones are merely in summer encampments, the strength of each is included in its permanent post.

TABLE showing the relative annual ratio of mortality between our northern and southern latitudes, as exhibited by posts.

Years.	NORTH.			SOUTH.		
	Strength.	Deaths.	Ratio of deaths per 1000 mean strength.	Strength.	Deaths.	Ratio of deaths per 1000 mean strength.
1822	2,729	52	19	1,999	275	138
1823	2,759	55	20	2,172	138	64
1824	2,774	48	17	2,738	109	40
1825	2,728	55	20	2,339	92	39
Total	10,990	210	–	9,248	614	–
Mean	2,748	52.5	19	2,312	153.5	66

It thus appears that the aggregate of deaths by posts is less than that obtained by regiments—a result to be ascribed to the operation of various causes. As the mortality in 1822 is higher than usual, being nearly 7 *per cent.*, the annual mean of these four years exceeds that of the three years based on the result of regiments, the former being $4\frac{1}{16}$ and the latter $3\frac{7}{10}$ *per cent.* A striking fact is, that the north exhibits little variation in the annual ratio of mortality, whilst the south varies from $3\frac{9}{10}$ to $13\frac{8}{10}$ *per cent.* In 1822, this relative mortality in the ratio of deaths per 1,000 of the mean strength, stands as 19 to 138, and in 1825 as 20 to 39, whilst the relative mean of the four years is as 19 to 66. In this calculation of the comparative salubrity of the north and the south, let it be borne in mind that the troops operating in our southern regions consist mostly of recruits enlisted in the north, with constitutions generally predisposed by intemperance to those diseases which are peculiar to the unacclimated.

This year presents but few results demanding comment. In 1826. the *first quarter*, 38 deaths, and in the *second*, 26, are reported.

In the *third quarter*, the aggregate of deaths is 48. At Fort Washington, as well as the surrounding country, bilious remittent fevers prevailed to a considerable extent. There were two deaths among 69 cases in a command of 58 men. At Fortress Monroe, morbid action also assumed a character of unusual severity. In a force of 11 companies, upwards of 500 cases of fever, diarrhœa, and dysentery, occurred; and the deaths were 11—five from remittent fever, three from diarrhœa, and three from the direct effects of intemperance.

The garrison of Augusta Arsenal, owing to the insalubrity of the position, encamped again, during the summer months, on the "Sand Hills." Assistant Surgeon Martin writes thus: "Perhaps in no year since the establishment of the arsenal in this vicinity, has any quarterly report, for the same season, exhibited so little disease, and left us in the

enjoyment of an equal degree of health. Contrasted with the lamentable state of the garrison during the same period last year, we have just cause to be thankful to a beneficent Providence. Our exemption may, in a great measure, be ascribed to the unusual general healthfulness of the season, the early removal of the troops to the sand hills, and the adoption and enforcement of precautionary means. There occurred but three cases of fever, and these were mild, and yielded to the usual course of treatment; three or four of the other cases were tedious, but did well eventually; and there remain on the sick list but two cases which require attention. The average strength of the command has been 39."

At Fort St. Philip, one of the most insalubrious posts, every man is reported to have been in the hospital during the quarter, and some even twice or thrice. The diseases were chiefly remittent and intermittent fever and dysentery; but three cases, however, terminated fatally. At New Orleans, the diseases peculiar to the season were few and mild.

At Council Bluffs, there were 561 cases of intermittent fever, embracing nearly all the command. The correctness of the treatment adopted in this disease, which generally prevailed extensively at this post, is evinced by the fact that but one fatal case occured, whilst out of 16 cases among Indians, which either received no attention or the directions of the Surgeon were not observed, eight terminated fatally.

Assistant Surgeon Pitcher calls attention to the custom, which then prevailed at many posts, of throwing frequently large quantities of water upon the floors of the soldiers' barracks, instead of washing and scrubbing them. As continual moisture in the subjacent ground, and decomposition in the timber ensued, it was supposed to exercise some agency in the production of fevers, diarrhœa, and dysentery. Although uncertain what influence it may have in the causation of disease, it is a custom deserving condemnation.

At Fort Delaware, there are reported 18 cases of enteritic inflammation. Assistant Surgeon Samuel B. Smith makes the following report: "It is impossible to convey an adequate idea of the intensity of suffering endured by the sick soldier from enteritis. The severest form of remitting bilious fever, (and some of them approached a malignant nature,) was mildness compared with the enteritic inflammation, caused by drinking the water which was conducted into cisterns from an extensive and badly painted roof. In most cases, the disease was manifested by violent pyrexia, excrutiating pain in the intestines, accompanied with an evident contraction in some portion of its calibre, and an obstinate costiveness, to overcome which baffled, for many successive days, every effort. In two instances, after a lapse of many days, balls of indurated fœces of the size and form, and almost the hardness, of a nutmeg, came away, covered with inspissated mucus bearing a close resemblance to a membrane. Several patients laboring under this severe disorder were, when the exacerbations came on, (the disease having a remitting form,) mentally deranged by the intensity of pain.

"The practice was to bleed freely at every return of the paroxysm of pain. The abstraction of blood, which could in no case be dispensed

with, it was necessary not unfrequently to repeat several times in the day. Until pain and inflammation had been subdued by blood letting, no medicine was of any avail as a cathartic. Calomel, castor oil, senna, salts, &c., were then freely administered; but the calomel did not afford that relief which might have been anticipated. Although used with great freedom, but two cases of ptyalism occurred. Enemas of tartar emetic, and castor oil and salts combined with laudanum, were incessantly employed, as were also hot baths. Wherever blisters could be conveniently placed, they were applied, and opium was freely given occasionally. Relapses several times supervened in consequence of imprudence on the part of the soldier. There remain some doubtful cases, and should any result fatally, careful dissections will be made and reported.

"The bilious remittents and intermittents, some of which were very obstinate, were treated in the usual manner by bleeding, emetics, cathartics, calomel and opium, quinine, bark, blisters, and wine."

In the *fourth quarter*, the aggregate of deaths was 51.

The *first quarter* gives an aggregate of 40 deaths. At Fort Delaware, 14 additional cases of *colica saturnina* came under
1827. treatment. "This report, in conjunction with the two last submitted," says Assistant Surgeon Smith, "must enforce conviction on the mind of the most incredulous, that the disease proceeds from local irritation. This poison is lead, suspended in the common drinking water of the garrison. It is collected in cisterns from an immense roof, which has been painted four or five times within the last 18 or 20 months. Let the explanation be what it may, the fact is undeniable, that a great number of the most deplorable cases of disease that I have ever witnessed, resulted from the use of this tank water. As the disease immediately subsided as soon as good water was procured from the Schuylkill, the relation of cause and effect is obvious. The men suffered agonizing torment, and the most stout hearted soldiers could not refrain from constant and loud lamentations. In some instances, no alvine evacuation could be procured for 14 days; in several, the inference was almost certain that the bowels were contracted in diameter; and in two cases, small portions of intestine came away. I was compelled to put the patients in hot water every six hours, and when in the bath to bleed or cup, or do both. In most cases, I must have drawn from 1 to 200 ounces of blood; and for many days, no rest could be procured, except when the blood was flowing in the bath. I gave injections of tarter emetic and laudanum, castor oil and laudanum, or an infusion of senna and opium, every three or four hours. Calomel and neutral salts, and calomel as a constitutional remedy, were in hourly requisition. There was no death, but it were better for several if they had died. Three remain with partial palsy, one of whom must be pensioned. One man, who had two severe attacks of enteritic inflammation, insisted, although in a feeble state, upon returning to duty. He was relieved from post in February with a chill in the night, which he supposed to be an attack of intermittent fever. In the morning, however, it proved to be typho-mania. Great and unceasing exertions for nearly

thirty days were made to save him, but in vain. He died of absolute debility. The garrison is now in tolerably good health."

During the *second quarter*, the aggregate mortality is but 33. In his report to the Hon. James Barbour, the Surgeon General speaks thus:—

"During this quarter, as in the corresponding ones of several previous years, there has been but little sickness, as the diseases peculiar to the winter have, in a great measure, subsided, and those of the summer have not yet commenced. Conjoined with this cause, the quality and quantity of the soldiers' clothing, the attention paid to the construction, arrangement, and cleanliness of his quarters, as well as to his diet and the several items of internal police, have caused a great decrease in those "camp diseases," which were formerly the almost invariable attendants on every military post. If to this be added the improvements introduced into the military hospitals, the abundance and quality of the medical supplies, the regularity with which they are furnished, and the faithful and appropriate manner in which they are applied by the medical officers, the great change in the tenor and complexion of the quarterly reports of sick, is as satisfactorily accounted for as it is creditable to the department. Many of the diseases peculiar to the soldier having been thus prevented or greatly mitigated, a large portion of the fatal cases from acute complaints is the effect of position and climate, which operate equally upon all; and, as in the treatment of diseases of this class, as the bilious remittents of the south and the various inflammatory affections of the north, the army surgeon is, for the most part, as successful, and often more so than the private physician in the vicinity, the decrease of death and disease finds an ample and satisfactory solution."

At Fort Delaware, six new cases of *Colica Pictonum* are reported, one of which proved fatal. In this case, which was the third attack of the disease, dissection disclosed "a mortification of five fingers' breadth all around the arch of the colon; and six lines below it, there was a stricture in the intestine, caused evidently by the inflammatory action of the last attack. The omentum was entirely wanting."

In the *third quarter* the mortality was unusually low, the aggregate of deaths reported being but 19. Of these, six occurred at Camp Leavenworth—a point at which intermittent and remittent fever was very rife. The total number of cases under treatment was considerably less than in the corresponding quarter of the two previous years, and the ratio of deaths to the number treated was not more than half as high. The summer encampment of the garrison of Fort Washington was attended with very beneficial effects. There was little sickness and no mortality; whereas, in former years, a large portion of the command suffered from intermittent and remittent fever. At Pensacola, yellow fever prevailed to a considerable extent. Surgeon Lawson, and two other commissioned officers and a sergeant, became affected from residing in or visiting the town. All recovered, and no new cases appeared at the cantonment. The following is the report of the medical officer:

"CANTONMENT CLINCH, *October* 15, 1827.

"SIR: I have the honor to transmit my semi-annual returns of medicines, &c., also a report of the sick and a diary of the weather for the quarter ending the 30th September.

"The yellow fever has prevailed this summer to a considerable extent at Pensacola. Among those attacked, were Paymaster Wright and his whole family, and Assistant Quartermaster Clarke, all of whom resided in town, and myself and a sergeant stationed at this place. As soon as those in town were in a condition to justify their removal, I brought them out to the cantonment, and they all recovered. While under the necessity of visiting Pensacola, I gave, at the same time, my attention to two or three friends, and saw in consultation several other persons; but after the removal of all belonging to the military establishment, I did not again expose myself to the infected atmosphere. Despite this precaution, however, about eight days afterwards, when no longer apprehending danger, I was suddenly struck down. The disease, although of short duration, manifested in its accession the utmost intensity. I was ill three days only, and by the seventh I was fit for duty. The sergeant, who contracted the disease by passing one night in town, suffered severely for a considerable time.

"Several nights of cold damp weather having immediately preceded the appearance of the disease, the earlier cases manifested an inflammatory character. In a few days, however, it assumed an opposite modification, becoming in some instances very malignant. In those cases characterized by high arterial action, venesection was generally adopted, but not always with success. In some instances, it was evidently highly beneficial; but in others it seemed to have no salutary influence, as the cases tended rapidly to a fatal result. The warm bath, which was generally employed, proved, in the cases which fell under my observation, of marked advantage; indeed, we had recourse to it repeatedly as the only means of relieving, even in a slight degree, the excessive pain under which the patient labored during the first two or three days of his illness. In addition to the warm bath and bleeding, calomel in scruple doses was given on the first and second day, assisted in its operation by castor oil and enemata; after which, calomel in doses of four or five grains was administered every three or four hours, until the fever was reduced, or the general system brought under mercurial influence.

"After the disease assumed the typhoid modification, the remediate means principally relied on by the American physicians were calomel in full doses, accompanied with repeated enemata and cold ablution or effusion, for the first two days; and afterwards, calomel in small doses, with the occasional exhibition of some neutral salt, continuing, at the same time, the application of the cold water and the administration of the enemata. The Spanish physicians, on the contrary, proscribed mercury altogether, and placed their trust wholly in the continued use of salts, enemata, ptisans, and the warm bath. The relative merit of these different modes of treatment could not well be determined; for,

the latter practitioners were seldom consulted in any cases except those occurring among the natives or other Spaniards, who mostly had the disease in its mildest form. Both parties, however, seemed to be aware of the necessity of keeping up a constant action upon the intestines; and I am induced to believe that almost every case in which a brisk action upon the intestinal canal was maintained, (which was not always practicable,) terminated favorably. In my own case, the remedies employed were two full doses of calomel, repeated enemata, and the warm bath. The calomel not only operated effectually on the bowels, but manifested its influence on the gums. On the second evening, my fever intermitted, and before the next paroxysm I was salivated, whereupon the disease yielded.

"Some of the victims of this fever died under the violence of the first paroxysm, before the occurrence of any remission or intermission; others sank immediately on the subsidence of the fever; and others, after surviving three or more paroxysms, expired. In those instances in which the vital energies were not at once prostrated beyond the power of reaction, and ptyalism could be induced before the second paroxysm, the issue was generally favorable.

"Whether the yellow fever of this year was less severe than that which prevailed in Pensacola in 1822, and at other points in different years, or whether the treatment was better adapted to the disease, I know not; but I have every reason to believe that it was not so fatal this year as on many former occasions, both at this and other places.

"With sentiments of respect, &c.,

"TH. LAWSON, *Surgeon U. S. A.*

"To the Surgeon General."

In the *fourth quarter* there were 57 deaths. Although the number of cases reported is less than the average of the corresponding quarter of the two previous years, yet the aggregate of deaths is greater by 10. As there occurred, however, 12 deaths at New Orleans, 11 at cantonment Leavenworth, and 10 at Fortress Monroe, there remain but 24 for all the other posts.

"The causes of the 12 deaths at New Orleans," says the late Surgeon General, "as well as the nature and treatment of the diseases for the quarter, are altogether unknown, the post having been attended by a private physician during the absence of the surgeon. The number of cases, on the arrival of Surgeon Harney, was 158, so that the proportion of deaths was 1 in 13."

The detachment of the 3d Infantry, that ascended the Missouri the previous autumn to occupy cantonment Leavenworth, suffered much from the diseases incident to troops employed in establishing new posts on the frontier. In a command of four companies, there occurred 163 cases of intermittent and remittent fever, of which 11 proved fatal in the stage of convalescence, caused by the supervention of diarrhœa and dysentery in subjects whose constitutions had been broken down by previous diseases.

In the remarks of Assistant Surgeon Turner, stationed at Fort Wolcott, Newport, R. I., the following important fact is stated: "In the course of thirty years' professional acquaintance with this place, I have never known a case of intermittent fever which was not decidedly referable to the malaria of some more southern climate as an original cause."

In regard to the diseases of Fortress Monroe, Surgeon Everett remarks, "that when the quarters of the troops shall be located within the walls of the fortress, the more formidable diseases, under which they now labor, will materially diminish, if not altogether disappear. Their present position on the immediate borders of the canal, the waters and banks of which are the common receptacle of the offals of the barracks and kitchens, is most unfortunate. During the last summer, there did not occur a case of fever which might not be ascribed to the agency of these causes.

"The use of sheet lead for covering the boilers and furnaces in the kitchens of two companies, the covers being painted over before each weekly inspection, has produced the most disastrous results. It escaped my observation for two or three weeks, until its effects suggested an investigation. Cholic, paralysis, and ulcers in their most frightful and obstinate forms, appeared in more than twenty cases in these two companies. The health of all was much impaired, one death ensued, and several, who still linger in a most wretched state, will, I think, eventually recover."

In the *first quarter*, the aggregate mortality was 35.

In the *second quarter*, the aggregate of deaths is 30. An ex-
1828. change of posts among the four regiments of Artillery having taken place the preceding year, the consequences resulting from the change of climate were regarded with interest; the result in relation both to the cause and extent of mortality, demonstrate that no unfavourable effects ensued.

The following extract is from the report of Assistant Surgeon Randolph, stationed at cantonment Leavenworth, Missouri: "Intermittent fever has exhibited a very obstinate and protracted character. Believing that this obstinacy was attributable, in many cases, to visceral congestion, the remedies appropriate in such cases were resorted to without regard to the original malady; and in many instances with the happiest result, as the disease yielded as soon as the affected organ was restored to its healthy action. In some cases, in which the intermittent fever defied the usual remedial means, venesection was employed on the accession of the cold stage. This practice was invariably followed by a complete arrest of the chill, without being succeeded by the hot and sweating stages. In most cases, one copious bleeding rendered the most obstinate intermittent completely subject to the remedies which it had previously defied. A second resort to the lancet was in a few cases requisite. The cases treated in the manner just detailed, did not evince any symptom of visceral congestion, but a general and almost complete abstraction of the circulating mass from the superficies of the body. Without regard to the apparent debility, the lancet was used until reac-

tion on the surface was indicated by a general glow. The most nervous and delicate females were subjected to this treatment, and in every instance with the most favourable result. My confidence in the efficacy of the sulphate of quinine is by no means impaired; but in the extraordinary cases just mentioned, it was of no avail; nor can it be, when congestion, either locally or generally, exists."

In the *third quarter*, the aggregate mortality was 50, of which 23 occurred at one post, Oglethorpe Barracks. The number of men present in August was 95; consequently nearly one fourth of the command fell victims. The sick, at this time, were under the care of a civil practitioner, who, it is believed, was well qualified in his profession. The chief diseases were bilious intermittent and remittent fever, from which his patients speedily recovered; but owing to excessive intemperance among the convalescents, indulged at the expense of the hospital stores, relapses took place, occasioning nearly the entire mortality.

At cantonment Leavenworth, intermittent and remittent fever prevailed to a considerable extent; but, during the quarter, there was but one death in a command of 280 men. In consequence of the mortality among the troops on its first establishment, this post acquired the character of being a very unhealthy position. As in all newly settled countries in a state of partial cultivation, much disease and suffering were endured by this command. In reference to this subject, the Surgeon General, in his quarterly report, remarks: "In addition to the ordinary irregularities incident to a march, the men are usually exposed, by day and by night, to the miasmata which infest the margins of our large water-courses. Having reached their destination with constitutions predisposed to disease, if not actually infected with it, they are required, during the very season of endemics, to labor constantly to provide shelter for the ensuing winter. With quarters perhaps unfinished, or at any rate damp and uncomfortable, they are totally deprived of the many little comforts to be obtained at an established post. Under these circumstances, the prevalence of bilious fevers, diarrhœa, and dysentery, is very satisfactorily accounted for. Thus, the position at Council Bluffs was probably as healthy a one as could have been selected, and although sickness prevailed there to an unprecedented degree on its first establishment, there were but three deaths the following year, one of which was accidental and another from convulsions.

"On this subject, I beg leave to subjoin the following extract from a communication of Dr. Gale who accompanied the Rifle regiment to Council Bluffs in 1819, and who has been almost constantly on duty in that country for the last ten years. He is well known to the Army as one of the most efficient and experienced officers of the department, and is now stationed at cantonment Leavenworth."

"During the year 1828," says Surgeon Gale, "there were but 9 deaths at this post, in eight companies, one from remittent and one from intermittent fever, one from epilepsy, one from apoplexy, one from rupture of the internal jugular vein, and four from consumption.

"I am told that, on the establishment of this post in 1827, diseases were unusually fatal. This will ever be the case among those who

first break ground in an uncultivated country, more especially among those that have not been acclimated.

"This post was selected with a special view to health by that experienced and intelligent officer Col. Leavenworth. It is situated on the right bank of the Missouri, on a dry elevated soil, with a substratum of lime-stone; it is surrounded with a forest of large trees, in the vicinity of an extensive and undulating prairie.

"During the past year, an hospital and permanent quarters for the troops have been nearly completed. The forest has been thinned, leaving trees for the purpose only of shade, and the undergrowth of hazel, greenbriar, and grape-vine, has been removed. Last fall, the luxuriant growth of the prairie was burned as early as practicable, to prevent vegetable decomposition; and the post has assumed the appearance of a comfortable and well regulated farm.

"The weather during the winter has been mild and agreeable. The apprehensions entertained immediately after the establishment of the post have subsided. During the last two months, there has been no one confined to bed by sickness.

"Learning that Government contemplate removing the troops on account of unhealthiness of locality, predicating its determination on unofficial reports, I have conceived it my duty to submit these remarks. I will venture the opinion, matured by eleven years' constant duty at the several military posts embraced between Jefferson barracks and Two-thousand-mile creek, that no position more salubrious than this can be selected between this point and the confluence of the Missouri and Mississippi."

Reference has already several times been made to the disadvantages which attend the career of the Army surgeon, compared with that of the civil practitioner. The physician in private life can form but little conception of the malignant nature of the morbific agents and the aggravated character of the diseases, which it falls to the lot of his military brother to encounter. As illustrative of this point, the following extract from the quarterly report of Surgeon Beaumont, at Fort Crawford, Prairie des Chiens, is presented:—"The garrison is surrounded by marshes and stagnant pools; the whole prairie has been twice inundated since April; the troops driven from the barracks by the rise of the water, (from one to four feet above the ground floor of their quarters,) returned to them while the earth and timbers were yet saturated with water; whilst the weather, which was excessively hot in July and August, was favorable to the evolution of marsh miasmata. The cases of intermittent fever have generally not been obstinate, nor the symptoms severe, owing, most probably, to the unusual wetness of the season. The most effectual treatment I have adopted, is to anticipate the cold stage by administering an emetic on the earliest sensations indicating its approach. The emetic consists of sulphas zinci grs. viii., and pulvis ipecac. grs. vi., to be repeated in fifteen minutes. This prescription is followed up in the course of ten or twelve hours with a scruple of calomel; and in the event of pain in the right hypocondrium, which generally attends, a large blister is applied to that region. The sulphas qui-

nine, (2 grs. every three hours,) is now administered. When much congestion exists, the use of the lancet, immediately before giving the emetic, even on the approach of the cold stage, I have found most effectual in hastening general reaction. I have met with no case that has not yielded to the foregoing treatment in the course of six, eight, or ten days. In some of the more obstinate cases, it becomes necessary to repeat the vitriolated emetic once or twice, and to continue the use of the quinine for fifteen or twenty days, to subdue the disease effectually."

In this quarter, there are 57 cases of *dengue* reported, 8 at Fort Pike, 14 at cantonment Clinch, and 35 at Fort Moultrie. *Dengue, dandy, rheumatismus febrilis*, &c., is an eruptive fever or exanthematous affection, which made its first appearance, in the latter part of 1827, in the Caribbean Islands. Extending westward, it soon spread extensively over the West Indies, and appeared, by the next year, on the neighboring coast of the United States. In the spring and summer of this year, our southern ports, New Orleans, Pensacola, Savannah, Charleston, &c., suffered a severe visitation; and, although some cases are reported to have occurred in Philadelphia and New York, the evidence is unsatisfactory. We have also accounts of its visitation at Vera Cruz and Carthagena; in 1824–'25, there prevailed in Calcutta and its environs an epidemic with features claiming a close identity. Its progress was remarkable for a universality of attack. "In a population of 12,000 souls who occupy the town of St. Thomas," says Stedman, "scarcely a single individual escaped." As it was sudden in its appearance, and rapid in its course, so was its duration as an epidemic brief. Towards the close of the year 1828, it suffered a gradual extinction; and, like the *black death*, the *sweating sickness*, and *cholera asphyxia*, it soon disappeared, leaving behind naught save the terror of its name. Fortunately, however, its history, unlike these epidemics, was distinguished less by its fatality than mere suffering. In the annals of medicine there is not, perhaps, recorded a disease so severe in its accession and duration, and so seldom leading to a fatal issue. In a paper on this affection, as it prevailed in the island of St. Christopher, by John Squaer, Esq., Assistant Surgeon of the 93d regiment, British Army, the writer observes:—"This disease, in all the instances I have witnessed, was considered of a simple, and though of a violent nature, yet there was nothing dangerous in it. It has been said to have terminated fatally in one or two instances in this island; in some of the others, it has caused death in several instances." Dr. Dumaresq, in his description of the epidemic at New Orleans, says:—"Out of the many thousands afflicted with it in this city, not more than four or five have died; and in these it appeared to be combined with some organic difficulty, and especially of the liver, which gave it the semblance of yellow fever, and such it was considered by some." According to Dr. Dickson, who gave an account of the epidemic as it appeared at Charleston, S. C.,—"Dengue, indeed, can hardly be said to have ever proved fatal of itself."

Surgeon Lawson, in transmitting his quarterly report of sick, at cantonment Clinch, writes as follows:

"Dengue has prevailed to a very great extent in this section of our country. In Pensacola, scarcely a person of any age, sex, or condition, has escaped an attack. With us in the cantonment, however, its influence has been less generally felt. The disease was modified somewhat in its character, and the intensity of its symptoms, by the peculiar constitution of the subjects attacked. Among the Americans and other persons of vigorous health, the fever usually ran very high, and continued without a remission from twenty to thirty-six hours; after which, it subsided, leaving the patient in a state of extreme debility, and laboring under an acute rheumatic affection of the muscular system generally. Among the Spaniards, who are generally less plethoric, the febrile manifestations were, on the contrary, much less intense; but the disease was of longer duration, and the pains throughout the fibrous tissues were infinitely more severe.

"As a general rule among the Americans, one or two efficient cathartics were administered in the early stage of the disease; after which, the repeated use of the warm bath, and frequent draughts of lemonade, were sufficient to complete the cure. Among the Spaniards, no active medicines at all were taken; ptisans and the warm bath were the only remedies employed. A recurrence of the disease, particularly of the rheumatic affection, was very common among all classes; but the relapses, I believe, were much more frequent among those who resorted to no active remedial means. It was always most safe to administer an efficient dose of medicine immediately on the attack; the disease was rendered more manageable, and its duration shortened. The period of its course varies from forty-eight hours to several weeks. Although a very severe, it is by no means a fatal disease; no case terminating in death has occurred within my knowledge."

From the various descriptions of this disease, it appears that it was generally ushered in by the usual manifestations of febrile diseases. Its accession was marked by a painful affection of the joints and muscles, attended by fever of the ordinary inflammatory type. The fever generally declined and disappeared on the second or third day, and the arthritic pains diminished in severity with the subsidence of the febrile exacerbation. The paroxysm terminated in an abundant perspiration, attended occasionally with a rash or miliary eruption, which, however, was regarded as an incidental symptom. The local pains abated so considerably that the inexperienced were often induced to resume their ordinary avocations. This deceptive interval, however, was but the prelude to the second stage. On the third or fourth day, the fever having generally intermitted, the tongue began to show a yellowish fur, and the stomach manifested considerable oppression, with nausea and sometimes vomiting. These annoying symptoms, on the fifth or sixth day, were relieved by a cutaneous eruption. In the hue and aspect of the skin, it resembled scarlatina more than measles, but was less confluent than either of those affections. The eruption consisted of minute papulæ of a florid red, slightly elevated, and distributed in irregularly shaped patches; and it appeared first on the face and trunk, and then spread to the extremities. A second febrile exacerbation, attended with

severe arthritic and muscular pains, supervened on the full development of this exanthem. After two or three days' duration, the eruption gradually disappeared, with some desquamation of the cuticle. In the neck, groin, and axilla, the lymphatic glands, in a good many cases, suffered inflammation and enlargement; and this condition of the glands, as well as the painful affection of the joints, often continued for weeks and months after convalescence. "This was a singular termination of the disease," observes Dr. Dumaresq, of New Orleans, "leaving sufferers from the fever hardly able to move about; and indeed the appearance of persons in the streets must have been truly pitiable to a healthy stranger—the apparently great and often fruitless efforts to make a step; here one would be seen dragging his legs after him, supported on crutches; and there another with limping gait and various contortions of countenance, bespeaking that his tardy progress was made at the expense of his bodily feelings."

As regards the pathology of dengue, it may be fairly classed among the exanthemata. It is an eruptive fever of a distinct and specific character united with an inflammatory affection of the joints. Hence, one writer styles it *scarlatina rheumatica;* another, *exanthesis arthrosia;* and a third, designates it an *eruptive articular*, or rheumatic fever. The vulgar appellation by which it became universally known, it received from the English negroes of St. Thomas. From the stiff affected gait induced in those laboring under it, it was called by them the "*dandy fever;*" and this term, when the disease invaded Cuba, was there corrupted in Spanish pronunciation, into *dunga* or *dengue.*

In relation to the origin and specific character of this exanthematic fever, some diversity of opinion obtains. Whilst one class of writers refers it to an epidemic constitution of the atmosphere, another maintains it to be a malady of a specific and contagious nature. In support of the latter position, it is stated that its career was uninfluenced by season, locality, or atmospheric change, and that its progression was gradual from place to place, following "the great routes of commercial intercourse." Professor Dickson is an advocate for its contagiousness; but all the evidence adduced is far from conclusive. Dr. Osgood, who saw the disease at Cuba, is strangely "led to consider the specific cause of dengue, and that of the yellow fever to be the same;" and Dr. Waring, of Savannah, maintains its close analogy with the "breakbone fever of 1826, and the epidemic fever of 1827," which last, like the *breakbone* fever of 1780, described by Rush, is a plain bilious remittent fever.

In reference to the prognosis of dengue, it has been already said that it scarcely ever proved fatal, unless complicated with some incidental lesions. The aged and debilitated suffered most severely; and amongst the intemperate, it not unfrequently ushered in *delirium tremens.* The population of some places experienced an almost universal attack. Neither age, sex, nor condition in life, was exempt from its invasion. Its visitations were equally made to the hovels of wretchedness and the airy habitations of comfort and affluence—

——— æquo pulsat pede pauperum tabernas
Regumque turres.

In regard to the treatment, there does not seem to have been much diversity of opinion. To control the violence of the attack, the lancet was generally employed during the inflammatory stage. Cathartics and diaphoretics were almost universally prescribed. In the earlier stages, it was usual to give antimonials, and subsequently Dover's powder, and other stimulating diaphoretics. Anodynes, in the form of opium and pulvis doveri, were generally resorted to with the most happy effect—a remedy loudly demanded by the pain and anguish of the sufferer.

In the *fourth quarter*, the total of deaths was 46, of which 18 occurred at Oglethorpe barracks—10 from bilious remittent and two from intermittent fever, four from dysentery, and two from intemperance. The strength was 85, and the number of cases 76. The number of deaths at this post for the year was 52, besides 19 women and children. The aggregate annual mortality of the army was 161; of these 27 arose from pulmonary consumption, 20 from the direct effects of intemperance, and 17 from wounds and other accidents, leaving but 55 from all other causes.

In conclusion, it may be well to mention a fact of practical importance in relation to yellow fever and similar epidemics. In our quarterly reports, it is found that the removal of the troops but a short distance from the locality in which the disease originated, frequently causes its sudden cessation. Remarkable instances of this kind are also furnished in the history of the epidemic fevers at Gibraltar; and the statistics of the British troops likewise show that, in the West Indies and Ionian islands, whilst one station suffers severely from yellow fever, others within a few miles are entirely exempt. In the epidemic cholera at Montreal and Halifax, the removal of the troops but a short distance was followed by the most happy effects. As the morbific agency manifested in the epidemic form, seems to be often limited to particular localities, it were always advisable on the part of the medical officer, on the sudden invasion of any serious disease of this character, to take into immediate consideration the expediency of a removal of the command.

PART II.

In entering upon the analysis of the statistical materials afforded in the second period, from 1829 to 1838 inclusive, it may be premised that the numerical method of investigating abnormal action has been successfully adopted. Having had access, so far as the investigation extends, to data, as precise as the nature of the subject will admit, the conclusions warranted by the numerical result may be regarded as a fair exposition of the relative influences of our various systems of climate. In this inquiry, the object aimed at will be the development of the laws of climate, and the application of these laws to the elucidation of disease.

The statistical and topographical details of the Military Posts of the United States, will be investigated in the order of the following general Divisions:

1. THE NORTHERN,
2. THE MIDDLE, and
3. THE SOUTHERN.

1. THE NORTHERN DIVISION OF THE UNITED STATES.

This Division will embrace three classes of post, characterized by certain modifications of climate: 1. The region of the great lakes; 2. The coast of New England; and 3. The interior posts remote from large bodies of water.

1. THE REGION OF THE GREAT LAKES.

The class of posts now under examination, comprises those situated on the inland seas along our northern boundary. In regard to the climate, a general description will, in a great measure, suffice for each post; nor is it necessary to enter into a detail of tabular statements, inasmuch as the meteorological phenomena peculiar to the region of these ocean-lakes are abundantly illustrated in the "*Remarks*" to the Meteorological Register. Modified by these inland seas, the character of the climate

bears a close similitude to that of the Atlantic coast. Compared with localities uninfluenced by the agency of large bodies of water, the range of the thermometer and the mean temperature of the seasons show less extremes. To illustrate this point, a comparison between Forts Brady and Snelling, the latter being 1° 46′ south and 8° 25′ west of the former, will suffice. The results based on five years' observation, show that the mean annual temperature of Fort Brady, is about 4° lower than that of Fort Snelling; but the latter, notwithstanding its being farther south, has a mean winter temperature about 2½° colder, whilst that of the summer is more than 10° warmer. In tracing a comparison on the same parallel between the Atlantic coast and the region beyond the modifying influence of the great lakes, a more striking contrast in the seasons is scarcely revealed. On the seaboard, the mean winter temperature is about 6° higher, and that of the summer about 9° lower. As further evidence of the modified temperature of Fort Brady, it may be stated, that the annual range of the thermometer is about 10° less, and the difference in the mean temperature of winter and summer about 15° less, than at Fort Snelling.

On reducing the ratios of the weather, based on the observation of five years, to numerical expressions, a remarkable contrast is discovered between localities on the lakes and those in opposite conditions. In the former, the prevailing weather is *cloudy*, and in the latter, *fair*. This comparison is instituted between Fort Snelling on the one hand, and on the other Forts Brady and Mackinac. At the former, the annual ratio of fair days is 215, and at the latter, 117; the cloudy days are as 73 to 127; the rainy, as 46 to 63; and the snowy, as 29 to 45. As regards the relative annual quantity of rain as given by three years' observation, that of Fort Brady is 31.89, and that of Fort Snelling is 30.32 inches. Contrasted with the relative number of rainy and cloudy days, the difference in the annual amount of rain is small; but this circumstance may be explained on the same ground as the fact, that in cold or temperate maritime localities, rain descends more frequently, but in much slighter showers than in warm or inland regions.

On the lakes, too, the seasons do not glide so rapidly into each other. The phenomena of spring are not developed with such suddenness as at Fort Snelling; for, according to a well-known law, a great heat preceded by a cold season excites, in a greater degree, the force of vegetation, than a summer of uniform high temperature.

FORT BRADY.

LATITUDE, 46° 39′. LONGITUDE, 84° 43′ W.

We come now to a description of special posts. Fort Brady, situated at the Sault St. Marie, Michigan, is on the southern bank of that river. It is distant from Lake Superior 15 miles, from Lake Huron 50, and from the Atlantic ocean about 800 miles. The river at this point is six feet below the surface of Lake Superior, and nearly 600 feet above the level of the ocean. The physical aspect of the surrounding country

exhibits considerable variety. The bank of the St. Marie, which is here three-fourths of a mile in width, presents a gradual slope for the distance of 250 feet, gaining in that space an elevation of 14 feet, in the rear of which the surface of the country approximates a level. For 300 yards from the bank of the river, the soil is cleared of timber, and is, although not very productive, in a state of cultivation. Immediately adjoining this cultivated ground, is a marsh half a mile wide, beyond which high lands appear. This marsh extends five or six miles down the river in a south-east direction, and west and south-west for 15 or 20 miles. It is covered with some large forest trees, and a thick growth of underwood. On the opposite side of the river, the country is undulating and mountainous, and covered with a dense forest. The falls in the river at this point, form an obstruction to the ship navigation of the upper lakes.

The prevailing winds are the west, north-west, and south-east. The north-west winds descend from mountain chains, traversing Lake Superior; and the west and south-east winds pass over the marshes already described.

The barrack and hospital accommodations are as good as we find them at our posts generally. They were built in 1824. The materials being wood, the lower logs, which were placed directly upon the ground, are now (1839) undergoing rapid decomposition. It has been with truth remarked that whilst our troops are better paid, fed, and clothed, they are worse quartered than those of any other nation.*

Having thus brought under view the principal circumstances which may be supposed to exercise an agency in the causation of morbid action, the diseases reported within the 10 years are exhibited in the following abstract:

* These topographical facts have been furnished chiefly by Assistant Surgeon Henry Holt.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Brady, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	97	88	117	107	85	104	101	105	102	105	1011	92	83	117	105	83	102	103	98	88	76	947
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	6	2	5	1	1	-	-	-	-	-	15
Remittent fever - -	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Synochal fever - -	-	1	-	-	3	-	-	-	-	-	4	-	1	1	1	-	-	-	-	-	-	3
Typhus fever - -	-	2	-	-	-	-	-	-	-	1	3	-	1	-	1	-	-	-	-	-	-	2
Diseases of the respiratory organs - - -	2	2	4	4	1	14	14	7	5	12	65	4	1	-	6	1	12	20	8	8	7	67
Diseases of the digestive organs - - -	5	2	7	5	2	1	6	7	2	3	40	1	3	10	4	8	9	5	10	4	10	64
Diseases of the brain and nervous system - -	-	-	-	1	1	-	1	-	1	-	4	-	-	3	-	2	-	-	1	-	-	6
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	1	2	1	2	6	5	2	3	1	23	2	3	2	3	2	2	9	3	2	3	31
Venereal affections -	2	-	2	2	-	-	-	8	2	-	16	-	-	2	-	-	-	1	4	1	-	8
Ulcers and Abscesses -	2	1	1	-	-	-	1	-	-	-	5	4	-	1	-	-	-	2	-	-	1	8
Wounds and Injuries -	13	2	7	3	6	5	5	9	5	12	67	4	3	3	2	2	3	5	-	7	4	33
Ebriety - - -	1	-	-	-	-	1	1	1	-	9	13	1	-	-	-	-	2	1	2	2	9	17
All other diseases - -	5	-	8	-	4	8	5	14	13	4	61	2	-	15	8	11	11	8	19	6	6	86
Total - - -	30	11	31	16	19	35	39	48	31	42	302	24	14	42	26	27	39	51	47	30	40	340

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	2835	1836	1837	1838	
Mean Strength	87	106	114	100	111	107	109	95	-	56	885	90	118	111	87	110	104	109	110	107	58	1004
Intermittent fever	4	6	3	-	3	-	-	-	-	1	17	-	2	-	1	-	2	-	-	-	-	5
Remittent fever	-	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Synochal fever	-	2	-	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	3
Typhus fever	1	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	7	-	9
Diseases of the respiratory organs	-	2	-	13	7	11	18	8	-	7	66	1	2	2	6	12	13	15	17	9	11	88
Diseases of the digestive organs	-	9	4	1	9	9	24	3	-	2	61	-	4	2	4	5	5	2	6	17	-	45
Diseases of the brain and nervous system	-	-	4	-	2	1	-	1	-	-	8	-	2	3	1	-	1	-	-	-	-	7
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	-	6	5	-	-	5	3	1	-	-	20	2	5	1	1	1	1	1	3	2	-	17
Venereal affections	-	6	1	-	-	3	1	2		4	17	-	8	2	2	-	3	17	7	6	3	48
Ulcers and Abscesses	3	-	-	-	-	-	-	-	No report.	3	6	1	4	-	-	-	-	-	-	-	4	9
Wounds and Injuries	6	4	3	1	7	6	6	6		9	48	4	4	4	2	3	8	3	5	10	4	47
Ebriety	-	-	-	-	-	1	1	2		3	7	-	-	-	-	-	1	2	1	2	-	6
All other diseases	3	7	7	3	14	3	7	4		3	51	1	2	4	6	8	5	4	5	4	4	43
Total	17	44	27	18	42	39	60	27	-	32	306	11	36	18	23	29	39	44	44	57	26	327

Under the class of diseases of the respiratory organs are comprised, 248 catarrh and influenza, 33 pneumonia, 6 pleuritis, and 7 phthisis pulmonalis; under the head of digestive organs, 119 diarrhœa and dysentery, 39 cholic and cholera, and 1 hepatitis; under the class of brain and nervous system, 7 epilepsy, 2 mania a potu, and 5 nyctalopia; and under that of venereal affections, 40 gonorrhœa and 48 syphilis.

As the total of deaths, according to the Adjutant General's returns, is 11, and the aggregate mean strength is 984, the annual ratio of mortality is $1\frac{1}{1\frac{1}{6}}$ per cent. Of the deaths, six are reported in the medical returns, *viz:* one typhus fever, one phthisis pulmonalis, one cholera morbus, occurring in a patient exhausted by chronic diarrhœa and secondary syphilis, and three from causes not designated, exhibiting a mortality of $\frac{6}{1\frac{1}{6}}$ per cent. This discrepancy arises from the circumstance that medical officers generally report the deaths on the sick-list only, omitting those that occur suddenly, from accidental causes, or on detachments.

This post may justly be regarded as one of the most salubrious stations in the United States. The annual ratio of febrile cases of malarial origin is low, that of intermitting fever being four per cent., and that of remitting fever only three, per thousand of the mean strength. Morbid action generally assumes an inflammatory character; and, with the exception of the typhus, which prevailed in the winter of 1837–'8, there has been no disease of a malignant tendency. In regard to this endemic, Assistant Surgeon (now Surgeon) McDougall reported as follows: "Shortly after my arrival at Fort Brady, in October, 1837, scorbutic symptoms were manifested in nearly every case of disease which occurred, such as spongy gums with hœmorrhage, unusual debility, coldness of the surface, and the sensation of sinking in the epigastrium. The whole command being put on a strictly antiscorbutic regimen, these symptoms soon disappeared without any recurrence. At this period, the first case of typhus was reported; but as I soon became a subject of the disease myself, I lost the only opportunity I have had of observing and treating this formidable disease.

"*Symptoms.*—Lassitude, loss of muscular power, tinitus aurium, disposition to syncope, pains in the head, back, and extremities, difficult respiration, rigors, pulse irregular, small, quick, and sometimes hard, tongue clean and red, and bowels constipated. In most cases, within 60 hours from the attack reaction was fully established; then the tongue became dark and dry with hœmorrhagic fissures, the teeth covered with black tough sordes, the eyes red and watery, and the temperature of the skin increased, giving that peculiar tingling sensation to the fingers characteristic of the malady. If the disease continues, petechial blotches appear, followed by subsultus tendinum, delirium, extreme prostration, and death. A favorable prognosis is indicated by a gradual subsidence of the symptoms detailed—abatement of thirst and heat, moisture of the skin, disappearance of petechiœ, black discharges from the bowels, hœmorrhage from the nose, deafness, and a turbid secretion from the kidneys. The duration of the disease was from one to two months.

"The treatment consisted in ventilation of the wards, strict police, and personal cleanliness, tepid bathing, calomel and opium to correct

the secretions, diffusible stimulants, particularly carb, ammoniæ, rubefacients, blisters, and occasionally cups applied to the epigastrium. Some of the cases were undoubtedly typhus syncopalis; but the general character of the disease was that of typhus gravior and mitior. The first case originated within the pickets, which are near 20 feet in height; the next occurred among the hospital attendants, then among the convalescents from other diseases, until finally all in hospital, excepting the steward, were affected. The only case that proved fatal in hospital was a private under treatment for gonorrhœa. From the garrison, the disease extended to the village, and thence to the Canadian shore.

"The probable causes of the fever were, the long continued prevalence of N. E. winds with rain, which, in this climate, is remarkably depressing to the powers of life—great accumulation of vegetable matter in a putrid state beneath the buildings of the fort, and in its immediate vicinity—confined air from the high stockade, and deficiency of acetic vegetables."

During the 10 years, there are 15 cases of typhus fever reported, of which eight occurred at the period to which reference has just been made. In the last two quarters of 1835, pneumonia was prevalent, and although severe, no case terminated fatally. In regard to pulmonary lesions no comments are required, inasmuch as this subject has been fully elucidated in a special report. The relative influence of the seasons is manifested in relation to intermittent fever; but this question will be more fully illustrated in the general results of this class of posts. As regards disease in general, there is little diversity presented in the different seasons. The first and fourth quarters exhibit the lowest ratio of sickness, as shown in the following table:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
10 first quarters -	1,011	302	299
10 second " -	947	340	359
9 third " -	885	306	347
10 fourth " -	1,004	327	326
Annual-ratio -	962	1,275	1,325*

It thus appears that among 1,000 troops, there are 1,325 cases of disease reported in the course of the year, and that consequently every man, on an average, has been under treatment once in every nine months.

* As this average does not quadrate with the total of the four quarters, it may be necessary to say that it is the result of the annual ratios, the mean strength being 962, and the total of cases 1,275. This remark will be found of frequent application.

As the forms of tabular arrangement adopted in reference to this post, are equally applicable to all subsequent ones, a few explanatory remarks are required. Under the head of *synochal* fever are condensed the cases reported as synocha, synochus, common continued, ephemeral, and inflammatory; but the majority of cases are reported under the last name. As the term *typhus* is subject to vague and arbitrary employment, diseases of a very diverse character are doubtless often registered under this head. The cases of typhus reported at our southern and southwestern stations, it may be presumed, generally owe their origin to the same miasm which produces intermittent and remittent fever. That it is often generated by the ordinary causes of fevers, is an opinion advanced by Armstrong—a doctrine which seems to have found but few advocates. When these morbific agents act on a system depressed and debilitated from any cause, a low or *typhoid* state of fever will be developed; but the phenomena of these fevers do not accord with those which characterize genuine contagious typhus, as described by Surgeon McDougall. Under the class of diseases of the *respiratory organs*, are included the following specific diseases: pneumonia, pleuritis, phthisis pulmonalis, hœmoptysis, catarrhus, asthma, dyspnœa, laryngitis, pertussis, *etc.* Under the class of diseases of the *digestive organs*, the following: tonsillitis, gastritis, hœmatemesis, enteritis, peritonitis, dyspepsia, colica, cholera, constipatio, diarrhœa, dysenteria, hepatitis, icterus, *etc.* Under the class of *brain and nervous system*, the following: meningitis, apoplexia, paralysis, epilepsia, cephalalgia, ictus solis, mania, delirium tremens, nyctalopia, *etc.* In regard to the other classes, it is deemed unnecessary to state the specific diseases.

FORT MACKINAC.

LATITUDE 45° 51′ N. LONGITUDE 85° 05′ W.

General Description.—Based upon limestone, with a very superficial covering of soil, the island of Mackinac rises, in its greatest elevation, 220 feet above the water of the lake. As the site of the present fort is elevated 150 feet, it is 728 feet above the level of the ocean. The island is about nine miles in circumference, and rises on its eastern and southern shore in abrupt rocky cliffs to the height of 150 feet. Although a large portion of the immediate shores of the lake in this vicinity is composed of marsh, yet there is much that presents an opposite character. From the site of old Mackinac, at the very extremity of the peninsula, the immediate shores, extending 150 miles along lake Michigan, are generally elevated, sometimes rising abruptly from 300 to 400 feet. As this post is unoccupied at the present time, it is impracticable to furnish the medical topography of the immediate locality of the fort.

In regard to its meteorological phenomena, it will suffice to make reference to the preceding station, or for more ample details, to the special report on meteorology.

The following abstract exhibits a condensed view of the principal diseases of this post, for the period of ten years:

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Mackinac, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - .	103	104	107	107	115	96	104	113	100	-	949	106	92	106	104	110	108	105	107	-	-	838
Intermittent fever - -	4	-	1	-	1	-	-	-	1	-	7	6	-	6	10	4	3	2	-	-	-	31
Remittent " - -	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2	-	1	-	-	-	3
Synochal " - -	-	1	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	1
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	5	5	2	1	2	2	7	25	25	-	74	4	5	4	-	8	15	7	20	-	-	63
Diseases of the digestive organs - - -	7	8	5	3	17	6	5	23	8	-	82	8	18	8	10	14	11	8	27	-	-	104
Diseases of the brain and nervous system - -	1	-	-	-	3	1	-	1	5	-	11	-	2	-	1	-	2	-	8	-	-	13
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	2
Rheumatic affections -	1	6	4	2	2	2	3	9	18	-	47	4	14	3	-	5	7	5	22	-	-	60
Venereal " - -	-	-	-	-	-	2	1	-	2	-	-	5	-	-	-	-	-	2	-	-	-	2
Ulcers and abscesses -	-	2	-	-	3	-	-	2	2	-	9	1	1	-	1	2	1	1	-	-	-	7
Wounds and injuries -	9	6	11	9	10	8	6	16	14	-	89	9	3	7	7	14	8	6	7	-	-	61
Ebrietas - - -	-	-	-	-	-	2	-	-	8	-	10	1	1	-	-	-	4	-	-	Vacated June 10th.	-	6
All other diseases - -	1	5	4	3	19	7	4	9	8	-	60	4	5	3	-	4	8	10	10		-	44
Total - - -	28	33	27	18	60	30	25	87	89	-	397	38	49	31	29	53	62	40	95	-	-	397

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	108	100	104	59	107	112	112	98	-	-	800	110	111	109	114	102	108	113	105	-	-	872
Intermittent fever - -	1	1	7	1	1	1	1	-	-	-	13	-	-	3	9	-	-	-	2	-	-	14
Remittent " - -	-	1	-	-	-	2	-	-	-	-	3	-	-	-	-	1	2	-	-	-	-	3
Synochal " - -	-	-	-	-	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1
Typhus " - -	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	8	8	1	3	2	6	17	21	-	-	66	3	1	3	5	1	17	12	21	-	-	63
Diseases of the digestive organs - - -	31	15	8	10	9	23	7	34	-	-	137	5	8	3	40	5	2	11	15	-	-	89
Diseases of the brain and nervous system - -	-	-	-	2	2	-	3	5	-	-	12	-	2	2	-	1	-	9	1	-	-	15
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1
Rheumatic affections -	3	5	3	-	3	3	4	13	-	-	34	2	3	-	7	1	2	10	16	-	-	41
Venereal " - -	1	-	-	-	1	-	2	3	-	-	7	1	-	-	1	-	-	1	1	-	-	4
Ulcers and abscesses -	3	-	-	2	-	1	1	3	-	-	10	1	-	1	-	-	2	1	3	-	-	8
Wounds and injuries -	10	4	8	2	7	17	3	20	-	-	71	7	3	4	31	3	7	10	17	-	-	82
Ebrietas - - -	1	3	-	2	-	3	-	-	-	-	9	1	-	-	-	-	-	-	3	-	-	4
All other diseases - -	8	4	7	-	7	9	14	5	-	-	54	3	2	9	3	6	1	9	6	-	-	39
Total - - -	67	41	34	23	32	66	52	104	-	-	419	23	19	27	96	18	33	63	85	-	-	364

Than this post, there is not a more healthful one in the United States. According to the Adjutant General's returns, there occurred but five deaths from all causes in the above ten years, being about $\frac{6}{10}$ per cent. per annum. In the medical returns, there is not reported a single death which can be in any way ascribed to the agency of climate. In 1832, one soldier of the command died of Asiatic cholera, and of four men laboring under this epidemic, left at this post on their march to Chicago, three died. In 1833, there was one death from a casualty, and in 1836, an officer died from neuralgia.

The general character of morbid action presents so little peculiarity that scarcely any comments from the medical officers have been elicited. Fevers of malarial origin present a low ratio, that of intermitting being 8, and that of remitting fever one annually per 100 of the mean strength. The fact that intermittent fever is more than twice as prevalent in the second than in the third quarter, may be difficult to explain. The four cases of intermittent fever reported in the first quarter of 1829, are attributed to the circumstance of these men "having been stationed for some years past on the Mississippi." In the third quarter of the same year, "bilious cholic" was very prevalent. Of the diseases reported under the class of respiratory organs, there were of catarrh 203, pleuritis 39, pneumonia 11, and phthisis pulmonalis 3; of those under the class of digestive organs, there were of diarrhœa and dysentery 124, cholic and cholera 80, and hepatitis 4; of those under the class of brain and nervous system, there were of epilepsy 6, and mania à potu 4; and of venereal affections, there were 10 gonorrhœa and 8 syphilis.

In relation to the relative salubrity of the different seasons, as calculated from the number of cases reported, the annexed table exhibits the ratios:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
9 first quarters,	948	397	419
8 second "	838	397	474
8 third "	800	419	524
8 fourth "	872	364	417
Annual ratio	865	1,577	1,823

As there are, among 1,000 troops, 1,823 cases reported annually, it follows that, on an average, every man has been under treatment once in about six and a half months.

FORT GRATIOT.

LATITUDE 43° N., LONGITUDE 82° 10′ W.

Fort Gratiot, situated on the river St. Clair, half a mile from the outlet of Lake Huron, is elevated 598 feet above the level of the ocean, being twenty feet above the surface of the lake.

Black river, distant about one mile in a S. and W. direction, is the only stream, with the exception of the St. Clair, in the vicinity. "It is bordered," says Assistant Surgeon Motte, "particularly on the west, by frequent broad marshes, which have been subjected to an accumulation of alluvion for a sufficient period to allow a deposition of *peat* from vegetable decomposition. These marshes exhale, during the summer and autumnal months, a pestilential atmosphere, generative of fever and ague, which is but too prevalent among the inhabitants in the vicinity."

"The surrounding country is greatly undulating. The soil is mostly a sandy loam, and the proportion of marsh is small. Clay is reached at the depth of twelve or fifteen feet. Most of the surrounding country is covered with forest; among the vegetable productions are oak, elm, maple, ash, hickory, black walnut, pine, &c.

"The lake and river shore in the immediate vicinity of the fort," says Assistant Surgeon Motte, "is a low gravelly ridge, extending nearly a quarter of a mile from the margin of the lake, when the ground suddenly rises to the height of twenty-five feet above the surface of the lake, and retains this elevation, with little variation, to near the shores of Black river. This elevated ground gradually approximates the St. Clair towards the fort, and a few rods below it becomes a perpendicular bluff in immediate contact with the water."

Between the fort and the ridge just described, there is a stagnant pond, which it has been found impracticable to drain, and which, it is supposed, is the copious source of miasmata. The hospital and barracks are represented as defective, being very damp and ill adapted for ventilation.

As regards the general meteorological character of this station, it differs not essentially from the two preceding posts. The modifying influence of the lakes exhibits invariably the impress of its features.

The following table presents a condensed view of diseases for the period of ten years:—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Gratiot, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	102	82	99	93	102	102	93.	97	112	-	882	-	76	90	89	104	109	98	89	*44	-	699
Intermittent Fever -	2	4	4	23	1	6	-	-	-	-	40	-	29	43	79	12	13	9	14	-	-	199
Remittent " - -	-	1	-	-	-	-	-	-	-	-	1	-	3	-	1	-	3	-	-	-	-	7
Synochal " - -	-	3	2	2	1	-	1	-	-	-	9	-	5	-	-	-	1	-	-	-	-	6
Typhus " - -	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	3	21	7	29	5	3	27	14	30	-	139	-	9	1	6	5	11	20	10	27	-	89
Diseases of the digestive organs - - -	6	13	14	4	8	10	7	4	14	-	80	-	22	15	42	8	26	5	3	7	-	128
Diseases of the brain and nervous system -	1	5	1	-	-	1	-	2	1	-	11	-	1	-	-	-	1	-	1	1	-	4
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	6	13	1	3	9	1	7	4	7	-	51	-	4	-	1	3	2	2	3	7	-	22
Venereal " - -	2	-	-	-	-	-	-	-	1	-	3	-	-	-	-	-	1	1	-	-	-	2
Ulcers and Abscesses -	1	-	-	-	4	7	-	4	4	-	20	No report.	-	-	-	1	-	11	1	-	No troops.	13
Wounds and injuries -	12	25	12	15	11	4	6	20	16	-	121		5	16	8	5	6	3	9	3		55
Ebrietas - - -	7	-	2	2	-	3	1	6	1	-	22		-	7	-	-	-	3	6	4		20
All other diseases -	15	21	4	3	8	3	6	1	10	No troops.	71		13	5	3	4	18	7	8	8		66
Total - - -	57	106	47	81	47	38	55	55	84	-	570	-	91	87	140	38	82	61	55	57	-	611

* The real strength for the quarter is 89, but it is necessary to deduct one-half, as the sick report embraces but six weeks.

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	97	103	93	-	105	99	104	87	-	-	688	91	109	99	102	102	92	102	120	-	40	857
Intermittent fever - -	6	50	95	-	31	10	23	12	-	-	227	-	18	45	3	18	-	4	-	-	6	94
Remittent " - -	6	-	2	-	-	1	2	-	-	-	11	-	-	1	-	-	-	-	-	-	1	1
Synochal " - -	-	1	2	-	-	-	-	-	-	-	3	-	1	-	-	-	-	2	-	-	-	3
Typhus " - -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
Diseases of the respiratory organs - -	8	7	3	-	2	9	2	-	-	-	31	7	12	47	4	6	25	10	25	-	6	142
Diseases of the digestive organs - - -	31	35	15	-	22	48	30	14	-	-	195	13	20	32	16	9	11	8	17	-	7	133
Diseases of the brain and nervous system - -	-	-	-	-	-	1	1	1	-	-	3	2	-	2	-	1	-	2	-	-	-	7
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	1	4
Rheumatic affections -	4	6	-	-	6	-	3	6	-	-	25	14	1	3	4	5	4	2	2	-	-	35
Venereal - - -	1	3	2	No report.	1	-	-	1	No troops.	No troops.	8	1	1	-	1	-	-	-	1	No troops.	5	9
Ulcers and abscesses -	-	-	-		2	1	6	-			9	-	-	-	2	2	2	4	4		-	14
Wounds and injuries -	6	6	6		1	6	10	6			41	15	10	5	9	7	5	8	9		4	72
Ebrietas - - -	5	5	7		1	6	5	3			32	-	4	7	-	-	9	5	7		5	37
All other diseases - -	16	9	10		11	10	8	6			70	10	3	8	2	4	5	5	26		-	63
Total - - -	83	123	142	-	77	92	90	49	-	-	656	63	70	150	43	52	61	50	91	-	35	615

Although the aggregate mortality in ten years, according to the Adjutant General's returns, is 35, being nearly 4 per cent. per annum, yet, when the twenty-one deaths which arose from epidemic cholera in the third quarter of 1832 are deducted, the ratio is found much below the mean mortality of the army, being $1\frac{6}{10}$ per cent. Of the 14 deaths, excluding those caused by cholera, 10 are reported in the medical returns, viz: 2 hydrothorax, 1 apoplexy, 1 typhus fever, 1 chronic bronchitis, 1 ebriety, 1 casualty, 1 sudden, and 2 from no assigned causes. It is thus apparent that, although morbific agents of a miasmatic character are unceasingly developed, their effects are never manifested in malignant and fatal endemics.

The most important sick report—that for the third quarter of 1832—is wanting. It was at this period, (May, 1832,) that Asiatic cholera made its appearance on the N. E. coast of America, and spread with fatal rapidity along the great water-courses on our northern frontier. Whilst one branch of the epidemic passed down the Hudson to New York, another continued west along the great lakes, until, in September, it reached some of our military posts on the upper Mississippi. As the Sac and Fox Indians, headed by Black Hawk, were at this time in open hostility, our troops in marching towards the theatre of war became exposed to the influence of the epidemic. Speaking of this event, Major General Macomb, in his annual report, says:—"Unfortunately, however, the cholera was just at this time making its way into the United States from Canada, and infected our troops while on board the steamboats in their passage up the lakes; and such was the rapidity with which this disease spread among them, that, in a few days, the whole of the force sent by the lakes was rendered incapable of taking the field. Some were landed at Fort Gratiot, others were stopped at Detroit, while the principal part reached Chicago in a most deplorable condition. Of the six companies of Artillery which left Fort Monroe, five companies arrived at Chicago, a distance of 1,800 miles, in the short space of eighteen days—a rapidity which is believed to be unprecedented in military movements. The loss by cholera in that detachment alone, was equal to one out of every three men."

With the exception of a few cases at Cincinnati, the epidemic did not this year sweep the valley of the Ohio. The influence of the "choleric malaria" was, however, manifested in a peculiar irritability of the bowels, as shown in the general prevalence of diarrhœa. In 1833 and 1834, this epidemic scourge attacked and re-attacked the more populous towns of the west, whilst the sparsely inhabited portions of that region were, in a great measure, exempt from its ravages. Localities favorable to the production of malarious diseases, suffered most severely from its visitations; and, unlike its history in Russia, its progress generally received a check on the occurrence of severe frost.

In regard to the general character of morbid action, the principal fact requiring comment is the extraordinary prevalence of intermittent fever compared with the two preceding posts. At Forts Brady, Mackinac, and Gratiot, the relative ratio of this type of fever, based on a calculation of the mean strength and total number of cases for 10 years, stands thus—

40, 75, 716. At Fort Brady, in the first ten quarters, there occurred no case, whilst at Fort Gratiot there were 40. As the general meteorological phenomena of these three stations exhibit similar features, these effects must necessarily be ascribed to the agency of the local causes detailed in the description of the medical topography of Fort Gratiot. The annual ratio of cases of intermittent fever is 72, and that of remittent is 3, per 100 of the mean strength. The ratio of the former is higher than the average of our southern stations.

Of the diseases of the respiratory organs, 346 were catarrh and influenza, 21 pneumonia, 32 pleuritis, and 5 phthisis pulmonalis. As there is but one death reported from this class, (phthisis,) it is apparent that the general impression in reference to the prevalence and fatality of thoracic inflammation in the climate of the lakes, is erroneous.

Under the class of digestive organs are comprised 213 cases of diarrhœa and dysentery, 58 cholic and cholera, and 8 hepatitis. Under the class of brain and nervous system, 7 epilepsy, 2 apoplexy, and 8 delirium tremens. Of the venereal affections, 6 were gonorrhœal and 16 syphilitic.

The relative influence of the seasons is strikingly manifested both in relation to intermittent and remittent fever. As regards disease in general, the diversity presented in the different seasons is exhibited in the subjoined abstract:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
9 first quarters - -	882	570	646
8 second " - -	699	611	874
7 third " - -	688	656	954
9 fourth " - -	857	615	717
Annual ratio - -	782	2,452	3,135

As there are 3,135 cases reported in the course of the year among 1,000 troops, it follows that every man, on an average, has been under treatment once in a little less than four months. The extent of sickness compared with Fort Brady is consequently more than twice as great; and in comparison with Fort Mackinac, the ratio is upwards of 50 per cent. higher.

FORT DEARBORN.

LATITUDE 41° 51′ N., LONGITUDE 87° 15′ W.

This post, which is now abandoned, is situated on the south-west shore of Lake Michigan, in the State of Illinois, 12 miles from the Wisconsin line. It is distant from the lake 250 yards, and is elevated 14 feet above its surface. The river Chicago, which runs upon three sides

of the fort, divides, half a mile above it, into two branches; the one north and the other south, in directions nearly parallel with the lake shore. As the bank of the lake is several feet higher than the ground in the rear, the latter is sometimes covered with water. Indeed, the whole country is so low that, in its early settlement, boats frequently passed, during the spring floods, over the prairies from Chicago to the Illinois river. At this post, the prairie opens upon the lake four miles wide, extending west beyond the reach of the eye. Above and below this point, the shore of the lake is densely covered with large forest trees, such as the different varieties of oak, ash, and hickory. The soil is generally a rich loam; in some places clay, and in others sand, predominating. Limestone is found in large quantities.

The diseases reported within the 10 years are comprised in the following abstract:

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Dearborn, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	91	90	92	-	104	91	96	104	-	-	668	95	83	-	-	93	97	88	86	-	-	542
Intermittent fever - -	-	-	-	-	2	-	-	3	-	-	5	9	-	-	-	2	1	7	16	-	-	35
Remittent fever - -	-	1	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	1
Synochal fever - -	-	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	5	1	-	6	6	3	19	-	-	42	3	1	-	-	3	4	3	-	-	-	14
Diseases of the digestive organs - - -	4	3	9	-	12	7	6	11	-	-	52	10	9	-	-	13	13	7	8	-	-	60
Diseases of the brain and nervous system - -	-	1	-	-	-	-	-	1	-	-	2	1	1	-	-	-	-	1	-	-	-	3
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	6	3	-	3	-	1	7	-	-	20	2	1	-	-	-	1	-	4	-	-	8
Venereal affections -	1	-	3	-	-	-	-	2	-	-	6	-	-	-	-	-	-	-	-	-	-	-
Ulcers and abscesses -	3	4	-	-	2	6	3	1	-	-	19	4	2	-	-	1	-	-	4	-	-	11
Wounds and injuries -	-	2	10	-	20	4	6	4	-	-	46	7	3	-	-	4	3	1	4	-	-	22
Ebriety - - -	-	-	-	-	5	1	-	2	-	-	8	-	-	-	-	3	-	1	1	-	-	5
All other diseases - -	1	-	2	-	13	2	2	8	-	-	28	3	4	-	-	1	3	3	4	-	-	18
Total - - -	11	22	30	-	63	26	21	58	-	-	231	39	23	-	-	27	25	23	41	-	-	178

No troops. Evacuated. No Troops. No exact reports.

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength	106	95	-	-	94	104	107	73	-	-	579	98	92	-	-	104	98	104	65	-	-	561
Intermittent fever	5	18	-	-	7	15	7	7	-	-	59	3	-	-	-	8	16	5	5	-	-	37
Remittent fever	-	13	-	-	-	2	5	2	-	-	22	-	-	-	-	1	-	-	-	-	-	1
Synochal fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs	3	1	-	-	-	3	-	2	-	-	9	3	1	-	-	1	9	8	2	-	-	24
Diseases of the digestive organs	8	8	-	-	35	50	30	13	-	-	144	8	2	-	-	9	14	10	10	-	-	53
Diseases of the brain and nervous system	-	1	-	-	-	2	-	-	-	-	3	1	-	-	-	-	1	-	-	-	-	2
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	4	1	-	-	3	2	3	4	-	-	17	-	2	-	-	1	1	3	4	-	-	11
Venereal affections	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Ulcers and abscesses	5	6	No. troops.	-	5	1	1	-	-	-	18	4	-	No. troops.	-	1	1	1	2	-	-	9
Wounds and injuries	4	6		-	11	12	1	4	-	-	38	8	4		-	6	-	2	2	-	-	22
Ebriety	4	-		-	3	-	2	2	-	-	11	-	-		-	-	1	1	3	-	-	5
All other diseases	3	-		-	6	4	14	3	-	-	30	5	1		-	6	1	1	-	-	-	14
Total	36	54	-	-	70	91	63	37	-	-	351	32	11	-	-	33	44	31	28	-	-	179

This position is one of our most salubrious military stations. According to the Adjutant General's returns, the deaths from all causes amount to eight, being $1\frac{5}{6}$ per cent. per annum. Of these deaths, five are reported in the medical returns, viz: one phthisis pulmonalis, two bilious remittent fever, and two spasmodic cholera. Excluding the last two cases, which occurred in 1834, the annual ratio of mortality is no higher than $\frac{5}{6}$ per cent.

Under the class of diseases of the respiratory organs are comprised 60 catarrh, 3 pneumonia, 20 pleuritis, and 2 phthisis pulmonalis. Under the class of digestive organs, 110 diarrhœa and dysentery, 38 cholic and cholera, and 2 hepatitis. Under the class of brain and nervous system, six epilepsy; and of the venereal affections, four were gonorrhœa and four syphilis.

This post was temporarily re-occupied during the campaign against Black Hawk in 1832; but as there was no permanent garrison, the report is not included in the above abstract. It was here that epidemic cholera displayed its most fatal effects among our troops. According to the report of Assistant Surgeon S. G. J. De Camp, 200 cases were admitted into hospital in the course of six or seven days, 58 of which terminated fatally. The strength of the command at this time was about 1,000. In regard to the mode in which this disease is communicated, Surgeon De Camp inclines to the opinion of its contagiousness. "Several of the men belonging to Major Whistler's command," he says, "took the disease, and two died. Several citizens of the village also died of cholera, although previous to the arrival of the steamboat, which brought the disease to Fort Dearborn, there was not a case of disease of any kind at the fort or in the village. When the troops marched for the Mississippi, they appeared in perfect health, yet on the way it broke out again, and three died. It made its appearance again when the command reached the Mississippi, and became as fatal, I believe, as it had been at Fort Dearborn. That the number of persons in any community susceptible of this disease is not great, appears from the fact that at Fort Dearborn the sick-report was small compared with the number present. As the troops were very much crowded in the fort, and as the disease was making frightful havoc, I advised the commanding officer to have the well men quartered in a barn outside of the pickets, from which time the number of new cases declined. The disease attacked principally those of intemperate habits with broken down constitutions. In fact drunkenness was almost certainly followed by cholera. I am, therefore, firmly of opinion that the disease, as it appeared at Chicago, was contagious under certain circumstances, such as predisposition, filthiness, and bad ventilation."

It may be remarked that, under such circumstances, dysentery has been known to become contagious.

The treatment by calomel and blood-letting, when it came to be fully adopted, proved so efficacious in the hands of Surgeon De Camp, that he regarded the disease as "robbed of its terrors."

As regards the relative influence of the seasons, the agency of heat and moisture is strikingly manifest in the causation of fevers of the in-

termittent and remittent form. The annual ratio of intermittents is 23, and that of remittents is 4, per 100 of the strength. In reference to disease in general, its diversities in this respect are shown in the subjoined abstract:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
7 first quarters -	668	231	344
6 second " -	542	178	328
6 third " -	579	351	606
6 fourth " -	561	179	305
Annual ratio -	588	939	1,595

By the mode of calculation adopted for the preceding posts, every man, on an average, was under treatment once in 7½ months—a ratio not more than half as high as the station just described.

FORT NIAGARA.

LATITUDE 43° 15′ N., LONGITUDE 79° W.

Situated on a point of land projecting westerly at the entrance of Niagara river into Lake Ontario, Fort Niagara is bounded on the north and northwest by the lake, and on the west and southwest by Niagara river. It is 14 miles from the Falls of Niagara, and 32 miles from Lake Erie. The surface of the country in the immediate vicinity is remarkably level, but there are no marshes within six or eight miles. The vegetable productions of the climate flourish here luxuriantly. The river at this point is about half a mile wide. The general character of the climate pertains to the same class as the preceding stations, marked by those meteorological features peculiar to positions on large bodies of water.

All the cases of disease reported during the 10 years are comprised in the following abstract:

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Niagara, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	114	103	84	98	128	94	-	-	-	56	677	105	101	81	96	124	-	-	-	-	54	561
Intermittent fever - -	4	4	-	1	4	1	-	-	-	1	15	22	2	3	9	27	-	-	-	-	3	66
Remittent fever - -	-	1	-	4	3	3	-	-	-	1	12	1	3	-	5	2	-	-	-	-	-	11
Synochal fever - -	-	2	-	-	-	9	-	-	-	-	11	2	-	-	5	5	-	-	-	-	-	12
Typhus fever - -	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	5	12	4	11	24	5	-	-	-	9	70	5	7	-	5	47	-	-	-	-	2	66
Diseases of the digestive organs - - -	4	6	5	4	12	12	-	-	-	-	43	7	7	8	10	18	-	-	-	-	1	51
Diseases of the brain and nervous system - -	1	1	-	-	-	-	-	-	-	-	2	1	-	-	-	1	-	-	-	-	-	2
Dropsies - - -	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1
Rheumatic affections -	3	1	2	2	7	-	-	-	-	-	15	2	2	1	3	4	-	-	-	-	2	14
Venereal - - -	1	5	1	1	3	1				3	15	-	3	1	3	-					4	11
Ulcers and abscesses -	9	2	2	2	6	3	No troops.	No troops.	No troops.	-	24	5	4	1	2	7	No troops.	No troops.	No troops.	No troops.	-	19
Wounds and injuries -	15	14	4	13	14	6				1	67	15	12	2	7	12					1	49
Ebriety - - -	2	-	4	4	-	-				1	11	6	10	-	-	-					-	16
All other diseases - -	19	3	4	9	17	22				2	76	17	20	-	10	22					6	75
Total - - -	63	51	26	51	92	62	-	-	-	18	363	84	71	16	59	145	-	-	-	-	19	394

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	103	95	94	-	110	-	-	-	-	96	498	105	83	97	58	101	-	-	-	-	100	544
Intermittent fever - -	6	2	2	-	7	-	-	-	-	9	26	1	-	3	2	8	-	-	-	-	17	31
Remittent fever - -	1	5	9	-	2	-	-	-	-	14	31	2	-	1	3	5	-	-	-	-	-	11
Synochal fever - -	-	4	-	-	-	-	-	-	-	-	4	2	-	-	1	4	-	-	-	-	-	7
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	4	4		21	-	-	-	-	3	32	2	4	29	5	27	-	-	-	-	8	75
Diseases of the digestive organs - - -	9	9	6		24	-	-	-	-	38	86	2	4	2	14	17	-	-	-	-	15	54
Diseases of the brain and nervous system - -	1	-	-		-	-	-	-	-	1	2	-	1	-	-	1	-	-	-	-	2	4
Dropsies - - -	-	-	-		-	-	-	-	-	1	1	-	-	-	1	1	-	-	-	-	-	2
Rheumatic affections -	3	3	2		10	-	-	-	-	5	23	-	1	3	3	7	-	-	-	-	6	20
Venereal - - -	1	4	1		4					2	12	-	5	3	1	2					-	11
Ulcers and abscesses -	5	3	2		6					5	21	3	-	6	4	5					2	20
Wounds and injuries -	12	5	12		13					9	51	10	5	16	5	12					6	54
Ebriety - - -	8	-	-		-					-	8	1	1	3	-	2					2	9
All other diseases - -	5	5	20		13					14	57	8	4	9	2	7					-	30
Total - - -	51	44	58	-	100	-	-	-	-	101	354	31	25	75	41	98	-	-	-	-	58	328

Evacuated June 26, for Chicago.

No troops.

No troops.

No troops.

No troops.

No troops.

No troops.

No troops.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Niagara, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	114	103	84	98	128	94	-	-	-	56	677	105	101	81	96	124	-	-	-	-	54	561
Intermittent fever - -	4	4	-	1	4	1	-	-	-	1	15	22	2	3	9	27	-	-	-	-	3	66
Remittent fever - -	-	1	-	4	3	3	-	-	-	1	12	1	3	-	5	2	-	-	-	-	-	11
Synochal fever - -	-	2	-	-	-	9	-	-	-	-	11	2	-	-	5	5	-	-	-	-	-	12
Typhus fever - -	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	5	12	4	11	24	5	-	-	-	9	70	5	7	-	5	47	-	-	-	-	2	66
Diseases of the digestive organs - - -	4	6	5	4	12	12	-	-	-	-	43	7	7	8	10	18	-	-	-	-	1	51
Diseases of the brain and nervous system - -	1	1	-	-	-	-	-	-	-	-	2	1	-	-	-	1	-	-	-	-	-	2
Dropsies - - -	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1
Rheumatic affections -	3	1	2	2	7	-	-	-	-	-	15	2	2	1	3	4	-	-	-	-	2	14
Venereal - - -	1	5	1	1	3	1				3	15	-	3	1	3	-					4	11
Ulcers and abscesses -	9	2	2	2	6	3	No troops.	No troops.	No troops.	-	24	5	4	1	2	7	No troops.	No troops.	No troops.	No troops.	-	19
Wounds and injuries -	15	14	4	13	14	6				1	67	15	12	2	7	12					1	49
Ebriety - - -	2	-	4	4	-	-				1	11	6	10	-	-	-					-	16
All other diseases - -	19	3	4	9	17	22				2	76	17	20	-	10	22					6	75
Total - - -	63	51	26	51	92	62	-	-	-	18	363	84	71	16	59	145	-	-	-	-	19	394

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	103	95	94	-	110	-	-	-	-	96	498	105	83	97	58	101	-	-	-	-	100	544
Intermittent fever - -	6	2	2	-	7	-	-	-	-	9	26	1	-	3	2	8	-	-	-	-	17	31
Remittent fever - -	1	5	9	-	2	-	-	-	-	14	31	2	-	1	3	5	-	-	-	-	-	11
Synochal fever - -	-	4	-	-	-	-	-	-	-	-	4	2	-	-	1	4	-	-	-	-	-	7
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	4	4		21	-	-	-	-	3	32	2	4	29	5	27	-	-	-	-	8	75
Diseases of the digestive organs - - -	9	9	6		24	-	-	-	-	38	86	2	4	2	14	17	-	-	-	-	15	54
Diseases of the brain and nervous system - -	1	-	-		-	-	-	-	-	1	2	-	1	-	-	1	-	-	-	-	2	4
Dropsies - - -	-	-	-		-	-	-	-	-	1	1	-	-	-	1	1	-	-	-	-	-	2
Rheumatic affections -	3	3	2		10	-	-	-	-	5	23	-	1	3	3	7	-	-	-	-	6	20
Venereal - - -	1	4	1		4					2	12	-	5	3	1	2					-	11
Ulcers and abscesses -	5	3	2		6					5	21	3	-	6	4	5					2	20
Wounds and injuries -	12	5	12		13					9	51	10	5	16	5	12					6	54
Ebriety - - -	8	-	-		-					-	8	1	1	3	-	2					2	9
All other diseases - -	5	5	20		13					14	57	8	4	9	2	7					-	30
Total - - -	51	44	58	-	100	-	-	-	-	101	354	31	25	75	41	98	-	-	-	-	58	328

Evacuated June 26, for Chicago.

No troops.

No troops.

No troops.

No troops.

No troops.

No troops.

This station presents the usual degree of healthfulness exhibited by the statistics of the posts on our northern chain of lakes. The deaths from all causes, according to the Adjutant General's returns, amount to 10, being $1\frac{8}{10}$ per cent. per annum. Of these deaths, eight are reported in the medical returns, viz: five phthisis pulmonalis, one peripneumonia, one dropsy, and one delirium tremens, the ratio of mortality being $1\frac{4}{10}$ per cent.

Under the class of diseases of the respiratory organs are comprised 203 catarrh, 19 pneumonia, 12 pleuritis, and 8 phthisis pulmonalis. Under the class of digestive organs, 136 diarrhœa and dysentery, 43 cholic and cholera, and 4 hepatitis. Under the class of brain and nervous system, 7 epilepsy and 3 delirium tremens; and of the venereal affections, 28 were gonorrhœa and 21 syphilis.

The diseases of this post have at no time presented any unusual characters. In regard to fevers of the intermittent and remittent type, a singular feature, at first view, obtains. In the second quarter, the ratio of intermittents is twice as high as in the third, whilst the reverse occurs in respect to remittents. It would thus seem that the cause of these febrile lesions becomes so augmented in intensity during the third quarter, as to develope itself mostly in the remittent modification. In the third quarter of 1838, a detachment of troops from Florida furnished nearly all the cases of diarrhœa and intermittent fever. The annual ratio of intermittents is 24, and that of remittents is 11, per cent. of the strength.

In reference to disease in general, the relative influence of the seasons is exhibited in the following abstract:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
7 first quarters -	677	363	536
6 second "	561	394	702
5 third "	498	354	711
6 fourth "	544	328	603
Annual ratio -	570	1,439	2,525

It thus appears that every man, on an average, has been on the sick report once in nearly every five months. The garrison of this post also suffered from epidemic cholera in 1832, when on its march towards the theatre of Indian hostilities. Having reached Detroit on the 30th June, the troops were mustered and inspected, no man being on the sick list. The men were quartered in an old brick building on the banks of the river, in the most filthy part of the town, and surrounded by grogshops and groceries. The soldiers indulged in every kind of excess; and, on the 4th of July, says Assistant Surgeon H. Stevenson, "it may be safely

asserted that there were not ten sober men in the command." No case of disease was reported prior to the evening of the fifth day after arriving at Detroit. On the morning of the 6th, the first case of spasmodic cholera appeared; and up to the 20th of July, the whole number of *confirmed* cases treated by Assistant Surgeon Stevenson was 47, of which 21 terminated fatally. The command consisted of 78 men. From the *premonitory* symptoms there was scarce an instance of exemption. As at Fort Dearborn so here also, those of intemperate habits and debilitated constitutions were its first and principal victims.

The cause of the sudden appearance of this disease at Detroit, leaving an intermediate country of considerable extent uninfected, may be difficult to explain. At the time, it was generally believed that the principle of infection existed in the steamboat in which the troops were conveyed from Buffalo to Detroit, this vessel having been employed in transporting crowds of filthy foreign emigrants westward from Montreal and Quebec. The "Henry Clay," among the troops on board of which the disease also appeared, had been engaged in the same kind of service.

In tracing the progress of this disease along the line of the St. Lawrence and the lakes, as taken from Tulloch's "Statistical Report on the Sickness, Mortality, and Invaliding among the Troops in British America," the most remarkable fact is, its progression with post-like regularity.

	Date of appearance of the disease.	
	1832.	1834.
Quebec	8th June.	7th July.
3 Rivers between Montreal and Quebec	Escaped.	9th "
Montreal, 180 miles above Quebec	10th June.	11th "
Kingston, 190 miles beyond Montreal	16th "	26th "
Toronto, 184 miles beyond Kingston	28th "	30th "
Fort George, 40 miles from Toronto	14th July.	13th Aug.
Detroit and Amherstburg, at the extremity of Lake Erie	6th "	End of August.

In view of these facts, combined with the circumstance that it was marked by the same progressive course along the other principal channels of immigration, viz. the banks of the Ottawa, the Richelieu, and along Lake Champlain to New York, the doctrine of importation, (more especially as several persons died of the disease on their passage from Ireland,) and its subsequent communication by contagion, was strongly favored.

Along the British frontier, strict quarantine regulations were consequently rigidly enforced, both in respect to the troops and inhabitants; but although apparently effectual in some instances, in others, as in Europe, it proved of no avail. Prussia, for example, disputed its pro-

gress foot by foot, with all the strictness of her well-known military discipline; but despite the triple *cordons sanitaires* of Prussia and Austria, it soon penetrated the capitals of both kingdoms.

Those opposed to the opinion of its propagation by specific contagion, asserted that, admitting that cholera is principally restricted to the highways of human intercourse, it is along navigable rivers that localities most favorable for its production, and subjects most liable to become its victims, are most apt to be found. Although the history of the disease in our country shows that malaria had considerable agency in its production, yet it prevailed on the arid sands of Arabia and the rocky ridges of the Caucasus, as well as in defiance of the winter frosts of Russia. It seems obvious, however, that some general distemperature of the atmosphere existed during the prevalence of the disease. Such meteorological conditions may obtain no less than the particular vitiation which produces the "influenzas" which prevail under every variety of season and locality. Who has ever detected by chemical analysis marsh or animal miasmata, or any contagious principle? The epidemic constitution of the atmosphere was doubtless the predisposing cause, which merely required certain exciting circumstances to develope the malady. Thus may be explained the earlier appearance of the disease at Detroit. In the course of its gradual progression from the east, the epidemic constitution may have been less intense at Detroit than at many points in the rear; but owing to a concurrence of circumstances in regard to the exciting causes, such as the excesses of a camp "*surrounded by grog-shops and groceries*," the disease may have been developed sooner than under ordinary circumstances. This opinion is favored by the fact that previously to the prevalence of cholera epidemically, and in many places in which it did not appear, there was a marked disposition to diseases of the digestive organs, as diarrhœa and common bilious cholera.

The contagious nature of the disease is rendered still more questionable from the fact, confirmed by the whole current of medical testimony in Europe, Asia, and America, that neither physicians nor those in constant attendance exhibited any peculiar liability to it. Medical officers have slept in their hospitals; nurses, to quiet timid females, have shared their beds during the night; the bed-clothes of patients who have died have been immediately used; and yet no bad consequences have followed. At Warsaw, Dr. Foy inhaled the breath, tasted the dejections, and innoculated himself with the blood of patients, without contracting the disease. There remains, however, another fact which seems the *experimentum crucis*, viz. that thousands of persons have left infected districts, and died of the disease in various places, without communicating it to the surrounding inhabitants.

It is thus apparent that the origin and nature of epidemic cholera are involved in much uncertainty, and that this seeming diversity of facts can only be reconciled by the adoption of the principle of *Chalin de Vinario*, one of the most celebrated physicians of the 14th century, viz: "*that all epidemic diseases may become contagious, and all fevers epidemic;*" a position confirmed by observers of all subsequent ages.

MADISON BARRACKS.

LATITUDE 43° 50′., LONGITUDE 77° 55′.

This station is at Sackett's Harbour, New York. Situated on the southern side of the bay formed by the entrance of Black river into Lake Ontario, it is distant from the latter 8 miles. The color of the water in the river, as its name indicates, is quite dark; a feature not unusual in this region. About three-fourths of a mile north-east of the post, a small creek empties into Black river. There are no marshes in the vicinity. As the barracks are elevated about 30 feet above the level of the lake, and as the surface of the lake is 232 feet above that of the ocean, it follows that the barracks are 262 feet above tide-water.

"The grounds around the garrison," says Assistant Surgeon T. Henderson, who has furnished a detailed description of the medical topography of this post, "are so level that they cannot be perfectly drained. The soil is dark, with much clay, and rests on stratum of limestone, which is from one to three feet below the surface. The nature of the soil and this superficial calcareous stratum keep the immediate vicinity of the post, even after ordinary rains, boggy and favoring terraqueous exhalation. The physical aspect of the surrounding country is waving and undulating. The soil is generally rich. The forest trees are maple, beech, birch, walnut, ash, elm, and hemlock. Esculent vegetables are produced in great abundance and variety. The staple agricultural product is wheat. No minerals are found in the immediate vicinity of Madison Barracks. About 50 miles north-east, lead mines of great value are wrought, and iron ore is obtained in the south-east part of the county (Jefferson) in which the station is located."

This post, as regards its general meteorological features, pertains to the classification common to all the preceding stations.

The barracks and hospital, built of limestone, were erected in 1822. A new hospital, constructed of the same material, is now (1839) being built upon a more approved plan.

The following abstract comprises the diseases reported in 10 years:

ABSTRACT exhibiting a condensed view of the principal diseases at Madison Barracks, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	100	97	116	107	-	-	-	-	-	-	420	104	101	118	*55	-	-	-	-	-	-	378
Intermittent fever -	6	2	2	-	-	-	-	-	-	-	10	31	5	-	1	-	-	-	-	-	-	37
Remittent " -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Synochal " -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	16	12	32	68	-	-	-	-	-	-	128	9	14	22	4	-	-	-	-	-	-	49
Diseases of the digestive organs - - -	27	29	58	16	-	-	-	-	-	-	130	39	49	93	34	-	-	-	-	-	-	215
Diseases of the brain and nervous system -	1	2	-	2	-	-	-	-	-	-	5	-	1	1	2	-	-	-	-	-	-	4
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	3	5	7	4	-	-	-	-	-	-	19	3	4	7	-	-	-	-	-	-	-	14
Venereal " -	2	3	-	6							11	1	1	-	1							3
Ulcers and abscesses -	3	2	3	2	No troops.	No troops.	No troops.	No troops.	No troops.	No troops.	10	3	-	2	-	No troops.	No troops.	No troops.	No troops.	No troops.	No troops.	5
Wounds and injuries -	18	28	15	14							75	17	27	34	4							82
Ebriety - - -	-	-	-	-							-	-	-	-	-							-
All other diseases -	9	18	23	12							62	2	13	20	18							53
Total - - -	85	101	140	124	-	-	-	-	-	-	450	105	114	179	64	-	-	-	-	-	-	462

* The strength was 102, but as the post was evacuated on the 20th May, it is equivalent to 55 for the whole quarter.

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength	101	116	112	-	-	-	-	-	-	343	672	103	112	107	-	-	-	-	-	-	451	773
Intermittent fever	5	17	1	-	-	-	-	-	-	24	47	3	-	1	-	-	-	-	-	-	23	27
Remittent "	1	7	-	-	-	-	-	-	-	5	13	-	3	-	-	-	-	-	-	-	3	6
Synochal "	-	-	-	-	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-	-	1	1
Typhus "	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Diseases of the respiratory organs	6	11	5	-	-	-	-	-	-	24	46	12	18	23	-	-	-	-	-	-	139	192
Diseases of the digestive organs	54	66	93	-	-	-	-	-	-	72	285	33	41	28	-	-	-	-	-	-	99	201
Diseases of the brain and nervous system	2	2	1	-	-	-	-	-	-	5	10	1	-	-	-	-	-	-	-	-	2	3
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	4	10	5	-	-	-	-	-	-	7	26	9	13	6	-	-	-	-	-	-	20	48
Venereal "	1	2	-							11	14	-	-	3							7	10
Ulcers and abscesses	4	-	9	No troops.	No troops.	No troops.	No troops.	No troops.	No troops.	9	22	1	-	-	No troops.	No troops.	No troops.	No troops.	No troops.	No troops.	7	8
Wounds and injuries	34	35	28							25	122	22	15	23							26	86
Ebriety	-	-	-							-	-	1	-	-							-	1
All other diseases	16	11	17							26	70	10	14	16							25	65
Total	127	161	159	-	-	-	-	-	-	213	660	92	104	100	-	-	-	-	-	-	353	649

Under the class of diseases of the respiratory organs are included 347 catarrh, 18 pneumonia, and 11 pleuritis; under the class of digestive organs, 433 diarrhœa and dysentery, 140 cholic and cholera, and 1 hepatitis; under the class of brain and nervous system, 13 epilepsy and 7 mania a potu; and under that of venereal affections, 28 gonorrhœa and 8 syphilis.

As the deaths from all causes, according to the Adjutant General's returns, amount to 11, and the aggregate mean strength is 751, the annual ratio of mortality is $1\frac{5}{16}$ per cent. Of the deaths, 9 are reported in the medical returns, viz. 1 congestive fever, 1 intermittent fever, 2 pneumonia, 1 phrenitis, 1 ebriety, 1 chronic visceral obstructions, 1 atrophia, and 1 nervous irritation supervening on amputation of the right arm; the ratio of mortality, excluding the last case, being $1\frac{4}{16}$ per cent.

Although this station does not exhibit a higher mortality than the mean ratio of posts on the lakes, yet it is found that disease prevails to a considerably greater extent; but the most remarkable fact is, that this excess arises mostly from diseases of the digestive organs, more especially diarrhœa and dysentery, whilst fevers of a malarial origin bear no corresponding ratio. Of cases of intermitting fever, the annual ratio is 20, and of remitting fever it is 3, per 100 of the strength. Although the average of intermittent fever is higher than that of Forts Brady, Howard, or Mackinac, it is lower than the ratio of Dearborn or Niagara, and little more than one-fourth as high as that of Fort Gratiot. The following table, designed to show the relative influence of the seasons upon disease in general, requires, in the present instance, some explanation. The first and second quarters exhibit the highest ratio of disease; but it will be found, on examining the preceding abstract, that if the third and fourth quarters of 1838, when the command was large and little disease prevailed, are excluded, inasmuch as the post was unoccupied in the first two quarters of that year, that the result will not vary from the general law.

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
4 first quarters - -	420	450	1071
4 second " - -	378	462	1222
4 third " - -	672	660	982
4 fourth " - -	773	649	841
Annual ratio - -	561	2,221	3,959

Consequently, every man, on an average, has been reported sick once in every three months; the highest ratio yet presented.

"The annals of Sackett's Harbour," says Assistant Surgeon Henderson, "like those of the lake shores on the frontier generally, show that

formidable diseases have prevailed at all seasons of the year. During the war of 1812, the epidemic called pneumonia typhoides originated on the lines, and appeared at this place. Those who recollect that extraordinary disease, know that it existed in the winter and spring, ceasing in summer. In July, 1813, from a tenth to a fifth of the crews of Commodore Chauncey's squadron were on sick report at the harbor. In August, more than one-sixth of the seamen were left on shore; and Cooper, in his Naval History, states that at one time in this season (1813) the Madison had nearly one-half of her complement on sick list. The same author says, "in the winter of 1814, the sickness at the harbor was of the gravest character. One-half of the crew of the Madison was sick, and one-fifth died. In the summer of that year, the operations of the squadron were delayed by the illness of the mechanics at the Navy Yard."

Since the peace of 1815 up to 1839, it would seem that no epidemic of a malignant tendency has prevailed at Sackett's Harbor.

"In May and June, 1839," says Assistant Surgeon Henderson, "diarrhœa became very rife at Madison Barracks, with here and there a case of fatal remittent fever. In July and the subsequent months up to this date, October 25th, the diarrhœa has been almost universal. Cases of fever became more numerous in July and August, several proving fatal.

"Let it be here observed, that the summer of 1838 was intemperately hot and dry; the summer of 1839 was cool and seasonable as to rain. General health prevailed east and south, except at Charleston, South Carolina, in 1838. In 1839, with a season throughout ostensibly favorable to health, so far as moderate heat and moisture are concerned, epidemic dysentery prevailed in New England; the most malignant endemics existed in New Orleans, Mobile, Pensacola, St. Augustine, Charleston, Augusta, Georgia, in Illinois, and in the towns and cities on the lower Mississippi. Is it then remarkable, that Madison Barracks should have been more sickly than usual? especially when it appears that, in several localities not far from the post, similar and severer visitations of fever appeared. Sackett's Harbor village has had more fever than has been known for twenty years. In the neighboring farming country, places usually healthy have suffered from fatal malarial sickness.

"And yet, as if the caprice of malarial influence were ever to baffle search into causes successfully, at Rochester and Buffalo, I am told, the troops were healthy, and at Plattsburg most remarkably so. Nearer to Madison Barracks, at Ogdensburg on one side, and at Oswego on the other, the towns were perfectly free from disease. I was informed by a very respectable physician at Oswego, that between May and the 22d August he had not seen one case of fever. At the same time, the eighth regiment, in all its departments, officers, soldiers, and families, was affected with diarrhœa; and as the autumn approached, remittent fever appeared very generally. In September [strength 592] there were forty-four cases of fever, exclusive of what appeared among the families. In October [strength 397] up to the 22d, there were thirty-eight

cases on the hospital register; making an aggregate, of what I have seen since the 23d of August, of about ninety cases, exclusive of *jaundice* and *intermittent* cases, that are forms of malarial disease; and especially exclusive of *diarrhœa*, the cases of which are extremely numerous and obstinate. This last disease would readily yield to hospital treatment and diet, but recurred too readily on going to quarters and to ration diet, or it would lapse into remittent fever."

In regard to the remedial management of the modification of fever alluded to above, he remarks, that "my conclusion is, that it is a tractable form of disease; requiring prompt vigilance to ascertain its earliest impression, and the immediate subjection of the soldier to the sanative influence of hospital treatment; and that, looking at the number of cases of diarrhœa, fever, jaundice, and intermittent, the mortality was not great."

In treating of the supposed causes of disease, it is shown that in 1838, when general health prevailed, all local circumstances, compared with 1839, when morbid action was very rife, were apparently disadvantageous. Again—"It is known that within a few years the lakes have risen between three and five feet, and are now falling. Popular opinion, which should always be attended to on such questions, though very often incorrect, has ascribed the sickness to this fall of water. I see nothing in the laying bare annually of a few inches of lake shore, nor in the draining of tributary streams, that could cause the sickness at Madison Barracks; for in the vicinity no grounds have been covered or laid bare by the rise or fall of the water, so as to afford malaria. This rise and fall of the vast interior seas is a phenomenon which cannot be philosophically considered as a cause of endemics."

In reply to the question, Is Madison Barracks a healthy station? the answer of Assistant Surgeon Henderson is in the affirmative, based on the following reasons:

"Although in 1813 and 1814 there was much sickness at Sackett's Harbor, yet it was incident to the state of war, to the crowd of soldiers and sailors assembled hastily at the post, to the inadequacy of good food and shelter, and to the exposures and privations endured by the seamen and soldiers.

"Since the war the station has generally been healthy, and the village adjoining uniformly so.

"If Madison Barracks has been more sickly during the present season, so has the surrounding country in various places, heretofore perfectly healthy.

"The inference that a station is unhealthy cannot legitimately be drawn from the experience of a season. The cause of the sickness at Madison Barracks in 1839 is, like the cause of summer and autumnal diseases, inscrutable. Disease seems to move in a cycle of years, and at some period of that cycle almost all sites are sickly."

It has been seen, however, that the result of statistical data show that this post, although the mortality is not higher, is more insalubrious than any other station on the lakes; and that this excess of disease arises chiefly from the class of lesions pertaining to the digestive organs. The

well known talents and industry of Dr. Henderson entitle his opinions upon medical subjects to much respect; but the result shows that there are questions connected with medical science which no ordinary observation, however aided by the efforts of genius, can decide. It is only by accumulating a multitude of facts, extending over diversified regions, and embracing thousands of individuals—the application of numerical analysis to the investigation of morbid action—that the comparative prevalence and influence of disease can be determined.

FORT HOWARD.

LATITUDE 44° 40′, LONGITUDE 87°.

This post is situated on the northwest bank of Fox river, one mile from the point at which it empties into Green Bay. This bay, which is an arm of Lake Michigan, indents the land for 90 miles. It commences 40 miles wide, and gradually lessens to four miles at its head, where it receives the waters of Fox river. "It is skirted about its head," says Acting Assistant Surgeon Ward, "with marshes a mile in width, covered with a luxuriant growth of grass and wild rice, which embrace the mouth of the river, and continue within half a mile of the fort. The water is from six inches to six feet deep on these marshes, which, by the operation of a diurnal flux and reflux of the waters of the bay, are alternately flooded and drained twice every 24 hours. Twenty rods back of the fort another marsh begins, and, spreading to the right and left, extends a mile or more in each direction. It differs from the marshes just described in this, that it is partly covered with timber, thickets of alder, evergreens and grass." Proceeding north and west two miles, the country presents a densely wooded region, as far as explorations have been made. On the opposite side of the river, as far as Lakes Michigan and Winnebago, the country is also in its primitive state, covered with dense vegetation of forest and underwood. The soil mostly consists of a vegetable mould, intermixed with clay and sand; and is generally of a character to reward the labors of the husbandman.

The mean annual quantity of rain, on an average of four years, is 38.83 inches.

This post, which is less under the modifying agency of the great inland seas than any other of the class, has been reserved for the last in description.

The diseases reported during the ten years are comprised in the following abstract:

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Howard, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	212	191	205	104	202	189	213	212	184	52	1764	221	197	200	89	197	211	188	180	170	49	1702
Intermittent fever - -	1	-	-	-	-	-	-	2	-	-	3	6	2	16	-	-	-	-	-	2	4	30
Remittent fever - -	-	4	-	-	-	-	-	-	-	-	4	4	2	-	-	4	-	-	-	-	1	11
Synochal fever - -	-	-	-	-	-	-	-	2	-	-	2	-	2	-	-	2	-	-	-	-	-	4
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	19	12	24	6	3	17	13	19	30	8	151	28	5	1	2	6	17	9	5	15	13	101
Diseases of the digestive organs - - -	17	16	41	3	14	5	27	9	15	4	151	19	28	19	10	18	20	27	8	28	7	184
Diseases of the brain and nervous system - -	-	-	-	-	9	4	-	7	2	-	22	1	-	-	-	2	2	2	2	-	-	9
Dropsies - - -	1	-	2	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	1	1
Rheumatic affections -	12	20	20	-	3	5	2	5	19	3	89	8	3	3	1	1	16	9	7	9	4	61
Venereal affections -	1	-	3	6	2	-	-	-	2	1	15	4	7	4	5	2	1	1	1	-	10	35
Ulcers and abscesses -	14	15	2	5	3	-	2	2	1	1	45	20	2	4	-	3	2	2	7	3	2	45
Wounds and injuries -	12	22	19	-	6	7	8	13	14	8	109	22	3	4	3	9	13	12	4	11	3	84
Ebriety - - -	11	-	14	8	-	3	1	-	1	2	40	7	19	-	-	-	5	10	-	5	1	47
All other diseases - -	16	9	21	-	-	16	5	10	3	1	81	7	35	2	8	7	14	15	2	12	12	114
Total - - -	104	98	146	28	40	57	58	69	87	28	715	126	108	53	29	54	90	87	36	85	58	726

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	219	225	110	-	191	220	218	156	144	43	1526	207	214	111	192	193	218	217	146	48	48	1594
Intermittent fever - -	11	13	1	-	4	1	6	2	1	4	43	2	2	2	-	2	-	2	1	2	4	17
Remittent fever - -	5	26	2	-	-	-	-	-	1	-	34	1	-	-	1	1	-	-	1	-	-	4
Synochal fever - -	-	-	-	-	10	-	-	-	-	-	10	-	-	1	-	-	-	-	-	-	-	1
Typhus fever - -	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	32	35	2	-	1	20	20	5	17	1	133	20	13	-	6	15	29	13	9	3	-	108
Diseases of the digestive organs - - -	66	57	21	-	44	91	53	14	45	12	403	20	16	9	16	17	12	8	9	8	3	118
Diseases of the brain and nervous system - -	1	-	-	-	-	2	-	1	-	1	5	3	1	-	1	1	2	-	1	2	-	11
Dropsies - - -	-	-	-	-	1	-	-	-	-	-	1	-	2	-	1	-	-	-	-	-	-	3
Rheumatic affections -	15	9	2	-	1	9	13	3	5	2	59	12	6	1	8	6	9	9	10	2	2	65
Venereal affections -	10	7	6		-	1	2	-	1	2	29	2	5	6	2	3	6	3	5	3	1	36
Ulcers and abscesses -	21	8	4		4	6	3	1	4	-	51	24	-	1	3	1	-	-	-	3	-	32
Wounds and injuries -	23	38	11		8	13	24	3	10	4	134	33	16	5	11	12	8	18	13	5	-	121
Ebriety - - -	8	14	-		-	6	5	15	6	-	54	-	11	-	4	3	-	2	3	1	-	24
All other diseases - -	17	34	2		17	16	8	5	15	2	116	6	28	9	13	5	6	8	6	11	4	96
Total - - -	210	241	51	-	90	165	134	49	105	28	1073	123	100	34	66	66	72	63	58	40	14	636

No report.

Under the class of diseases of the respiratory organs are comprised 384 catarrh, 6 pneumonia, 60 pleuritis, and 28 phthisis pulmonalis; under the class of digestive organs, 379 diarrhœa and dysentery, 184 cholic and cholera, and 10 hepatitis; under the class of diseases of the brain and nervous system, 15 epilepsy, 1 mania a potu, and 2 nyctalopia; and under that of venereal affections, 67 gonorrhœa, and 46 syphilis.

The deaths from all causes, according to the post returns, are 25, being $1\frac{5}{7}$ per cent. per annum. Of these, 15 are reported in the medical returns, viz: 4 diarrhœa, 1 gun-shot wound, 1 influenza, 1 chronic pneumonia, 1 phthisis pulmonalis induced by excessive ebriety, and 7 of causes unreported. Including all these cases, the ratio of mortality is less than one per cent.; but, as the causes of death are not regularly reported, it is impracticable to give the exact ratio of mortality from disease. In 1829, the subjects of two deaths were recruits, who were "far gone" when they joined, and in 1832, one resulted from a gun-shot wound, whilst the causes of 7 are not stated. It thus appears that this station is a very salubrious one.

There is little in the history of disease at this post requiring comment. The annual ratio of intermittents is six, and that of remittents is three, per one hundred of mean strength. When it is considered that this fort, which occupies a sandy eminence about ten feet above the level of the bay, is almost surrounded by marshes, the low average of malarious fevers seems at first view inexplicable. It may be safely assumed that this exemption is owing to the circumstance that these low lands are always covered with water; and, upon the same principle, it follows that when drained and brought under cultivation, this station will become unhealthy. The following abstract exhibits the relative agency of the seasons in the production of disease in general.

TABLE showing the relative agency of the seasons in the production of disease in general.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
10 first quarters	1,764	715	405
10 second "	1,702	726	425
9 third "	1,526	1,073	703
10 fourth "	1,594	636	399
Annual ratio	1,647	3,150	1,913

Every man has, consequently, on an average, been reported sick about once in every six months. There are upon these ocean-lakes other posts which have recently, owing to the disturbances on that frontier, grown into importance, such as those at Detroit, Buffalo, and Plattsburg. The data, although insufficient to authorize the usual tabular arrangement, yet suffice to show that these stations are no less salubrious than those already described.

A general view of the results obtained from the statistics of the class of posts described, possessing the common characters peculiar to posi-

tions on our northern lakes, will show that this region is extraordinarily salubrious. The annual ratio of mortality according to the medical reports is $\frac{9}{10}$ per cent., and, according to the Adjutant General's returns, $1\frac{3}{10}$ per cent. Although there is little difference in the ratio of mortality at the various posts, yet the extent of sickness, as determined by the number of cases reported, presents considerable diversity. Fort Brady exhibits the lowest and Madison Barracks the highest average.

The following table shows these various relations at a single view, based on the results of ten years—

TABLE exhibiting the ratio of sickness at different posts.

	Mean aggregate strength	Deaths per Adj't Gen.'s returns.	Deaths per Medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength under treatment annually.
Fort Brady -	962	11	6	1,275	1,325
" Mackinac -	865	5	2†	1,577	1,823
" Gratiot -	782	14*	10	2,452	3,135
" Dearborn -	588	8	3‡	939	1,595
" Niagara -	570	10	8	1,439	2,525
Madison Barracks -	561	11	9	2,221	3,959
Fort Howard -	1,647	25	15	3,150	1,913
Aggregate -	5,975	84	53	13,053	-
Ratio per 1,000 -	-	13§	9	-	2,185

As the ratio per 1,000 of mean strength under treatment is 2,185, it follows, pursuing the mode of calculation adopted, that each man, on an average, has been on the sick list once in every five and a half months. As cholera produced its greatest havoc among troops on the march, the results do not appear in the returns from the posts.

To illustrate further the climate of the region of the great lakes, and to show the relative influence of the seasons in the production of morbid action, such diseases have been selected for elucidation in the subjoined abstract as have a manifest dependence upon meteorological causes. Typhus fever, it is true, may not belong to this class; but in order to present a complete view of all febrile affections, its inclusion has been deemed advisable. Under the head of synochal fever are condensed the cases registered as synocha, synochus, common continued, ephemeral, and inflammatory fevers; but the cases of this class, reported under the last name, constitute a majority of the whole.

* 21 deaths from epidemic cholera excluded.

† 1 death from epidemic cholera excluded.

‡ 2 deaths from epidemic cholera excluded.

§ This result is based on an aggregate mean strength of 6,377, whilst that of the medical returns is 5,975. This difference is owing to the circumstance that some of the quarterly sick-reports are wanting.

TABLE exhibiting the relative influence of the

DISEASES.	Fort Brady.	Fort Mackinac.	Fort Gratiot.	Fort Dearborn.	Madison Barracks.	Fort Niagara.	Fort Howard.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter - -	–	7	40	5	10	15	3	80	6371	13
Second " - - -	15	31	199	35	37	66	30	413	5667	73
Third " - - -	17	13	227	59	47	26	43	432	5648	77
Fourth " - - -	5	14	94	37	27	31	17	225	6205	36
Annual ratio -	37	65	560	136	121	138	93	1150	5973	193
REMITTENT FEVER.										
First quarter - -	1	1	1	2	–	12	4	21	6371	3
Second " - - -	–	3	7	1	–	11	11	33	5667	6
Third " - - -	2	3	11	22	13	31	34	116	5648	21
Fourth " - - -	–	3	1	1	6	11	4	26	6205	4
Annual ratio -	3	10	20	26	19	65	53	196	5973	33
SYNOCHAL FEVER.										
First quarter - -	4	2	9	–	–	11	2	28	6371	4
Second " - - -	3	1	6	1	–	12	4	27	5667	5
Third " - - -	2	1	3	–	5	4	10	25	5648	4
Fourth " - - -	3	1	3	–	1	7	1	16	6205	3
Annual ratio -	12	5	21	1	6	34	17	96	5973	16
TYPHUS FEVER.										
First quarter - -	3	–	2	–	–	1	–	6	6371	1
Second " - - -	2	–	–	–	–	1	–	3	5667	5-10
Third " - - -	1	1	1	–	–	–	1	4	5648	7-10
Fourth " - - -	9	–	1	–	1	–	–	11	6205	1 8-10
Annual ratio -	15	1	4	–	1	2	1	24	5973	4
DIARRHŒA AND DYSENTERY.										
First quarter - -	23	18	36	11	55	18	58	219	6371	34
Second " - - -	28	36	32	16	95	26	75	308	5667	54
Third " - - -	39	63	92	65	160	63	203	685	5648	121
Fourth " - - -	29	7	53	18	123	29	43	302	6205	49
Annual ratio -	119	124	213	110	433	136	379	1514	5973	253

seasons in the production of morbid action, &c.

DISEASES.	Fort Brady.	Fort Mackinac.	Fort Gratiot.	Fort Dearborn.	Madison Barracks.	Fort Niagara.	Fort Howard.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter - -	74	66	119	30	102	55	129	575	6371	90
Second " - - -	56	47	79	8	38	54	70	352	5667	62
Third " - - -	46	50	24	6	32	30	94	282	5648	50
Fourth " - - -	72	40	124	18	183	64	91	596	6205	96
Annual ratio -	248	203	346	62	355	203	384	1805	5973	300*
PNEUMONIA.										
First quarter - -	3	1	4	1	4	10	1	24	6371	4
Second " - - -	4	2	12	1	6	5	2	32	5667	6
Third " - - -	16	5	–	–	5	1	–	27	5648	5
Fourth " - - -	10	3	5	1	3	3	3	28	6205	5
Annual ratio -	33	11	21	3	18	19	6	111	5973	19
PLEURITIS.										
First quarter - -	1	5	9	6	6	5	11	43	6371	7
Second " - - -	4	12	10	5	3	3	16	53	5667	9
Third " - - -	–	10	6	4	–	–	25	45	5648	8
Fourth " - - -	2	12	7	5	2	4	8	40	6205	7
Annual ratio -	7	39	32	20	11	12	60	181	5973	30
PHTHISIS PULMONALIS.										
First quarter - -	3	1	–	1	–	2	10	17	6371	3
Second " - - -	1	–	2	–	–	3	6	12	5667	2
Third " - - -	–	–	1	–	–	–	10	11	5648	2
Fourth " - - -	3	2	1	1	–	1	2	10	6205	2
Annual ratio -	7	3	4	2	–	6	28	50	5973	8
RHEUMATISM.										
First quarter - -	23	47	51	20	19	15	89	264	6371	41
Second " - - -	31	60	22	8	14	14	61	210	5667	37
Third " - - -	20	34	25	17	26	23	59	204	5648	36
Fourth " - - -	17	41	35	11	48	20	65	237	6205	38
Annual ratio -	91	182	133	56	107	72	274	915	5973	151

* As the mean strength of each quarter is not the same, the annual ratio of cases does not quadrate with the sum of the four quarters.

As the influence of climate in the production of the class of pulmonary diseases, will be more fully developed in proportion as the numerical results of each class of posts come under consideration, it is sufficient now to direct attention to the fact that, whilst with regard to catarrhal affections the influence of the seasons, in this class of posts, is strikingly manifest, the same law does not hold in relation to pleuritis, pneumonia, and phthisis pulmonalis. The ratio of cases of catarrh and influenza, which is, in the last quarter of the year, 96 per 1,000 men, gradually decreases in the first, second, and third quarters, the ratio of the last, (the season of summer,) being only fifty.*

In respect to rheumatic affections, it is seen that the ratios of the second and third quarters are but little lower than the first and fourth.

The results obtained in the last column are important, as indicating the actual ratio in which these diseases prevail. If 1,000 men, for example, were stationed at the several posts, the average would show that, in the first quarter 13 would be attacked with intermittent fever, in the second quarter 73, in the third 77, in the fourth 36, and in the whole year 193. As these results, based on the statistics of ten years, embrace about 6,000 individuals, occupying seven different localities, the numerical ratios may be regarded as fair expressions of the general laws of this climate in relation to these diseases. Having once ascertained the laws which obtain in other regions of the United States upon these questions, as well as the precise mortality, conclusions of a valuable character may be deduced.

II. THE COAST OF NEW ENGLAND.

The class of posts to be now brought under view extends along the coast of New England, from Eastport to the harbor of New York. Although arranged in a distinct class, they bear a striking similitude, as regards meteorological phenomena, to those already described. It is, therefore, deemed unnecessary to enter into any detail, more especially as the peculiar climatic features of this region were referred to in the introductory remarks of the preceding class. In regard to the mean temperature of the seasons, the range of the thermometer, and the relative proportion of fair and cloudy weather, there is no great disparity. Unlike the succeeding class—the inland posts remote from large bodies of water—the air is moist, and the changes of the seasons are more slow and uncertain.

* In the calculations of this class, the statistics of Fort Independence in reference to pulmonary diseases have been excluded, on the ground that some error exists. The total of pleuritis and pneumonia is eight times as high as that of catarrh, whilst the ratio of the former is nearly twenty times as high as that of the remaining posts of the class. As but one death is reported among 261 cases of pleuritis and pneumonia, that a great majority belonged to the class of catarrhal affections is probable.

FORT SULLIVAN.

LATITUDE 44° 44′, LONGITUDE 67° 4′ W.

Fort Sullivan is the most northern post on the Atlantic coast, being near the line of the British possessions. It is situated on Moose island, which is close to the main land, a small isle intervening. The town of Eastport is on the same island, which is about four miles long and two wide, having a rocky and sterile soil. The fort is elevated about 70 feet above the level of the ocean.

The diseases reported during the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Sullivan, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	59	64	64	65	61	50	58	63	-	-	484	56	62	58	55	56	48	58	62	-	-	455
Intermittent fever - -	-	-	-	2	1	-	-	-	-	-	3	-	-	2	-	-	-	-	-	-	-	2
Remittent fever - -	1	-	-	-	-	-	1	-	-	-	2	2	5	-	-	-	-	1	-	-	-	8
Synochal fever - -	1	2	2	-	-	-	-	-	-	-	5	-	-	1	-	-	-	-	-	-	-	1
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	3	3	10	1	9	7	8	5	-	-	46	-	3	6	7	3	6	5	1	-	-	31
Diseases of the digestive organs - - -	14	12	11	6	1	3	2	4	-	-	53	12	11	12	3	2	7	1	2	-	-	50
Diseases of the brain and nervous system - -	6	2	3	-	-	-	-	-	-	-	11	-	1	5	-	1	-	-	2	-	-	9
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Rheumatic affections -	4	2	2	-	3	-	1	-	-	-	12	5	3	1	2	2	3	1	1	-	-	18
Venereal " -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1
Ulcers and abscesses -	1	-	3	-	1	1	3	1	-	-	10	-	-	-	2	-	1	1	1	-	-	5
Wounds and injuries -	3	12	4	2	6	2	7	8	-	-	44	1	3	5	5	4	-	3	7	-	-	28
Ebriety - - -	6	2	-	2	-	-	-	2	-	-	12	9	-	5	2	2	-	-	1	-	-	19
All other diseases - -	3	3	6	-	1	-	1	7	-	-	21	8	4	12	2	3	-	3	-	-	-	32
Total - - -	42	39	41	13	22	13	23	27	-	-	220	38	30	50	23	18	17	15	15	-	-	206

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	55	57	57	55	52	57	56	-	-	-	389	48	60	56	65	49	61	60	-	-	-	399
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
Remittent " - -	-	-	-	-	1	4	-	-	-	-	5	2	-	-	-	-	-	-	-	-	-	2
Synochal " - -	-	2	-	-	-	-	-	-	-	-	2	-	5	-	-	1	2	-	-	-	-	8
Typhus " - -	2	1	-	-	-	-	1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	-	2	2	2	3	2	7	-	-	-	18	5	2	14	10	11	19	1	-	-	-	62
Diseases of the digestive organs - - -	15	19	22	9	8	7	2	-	-	-	82	9	11	6	3	5	6	6	-	-	-	46
Diseases of the brain and nervous system - -	8	2	6	-	1	-	3	-	-	-	20	1	1	-	-	1	1	1	-	-	-	5
Dropsies - - -	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	1	4	2	5	1	-	-	-	-	14	1	3	4	1	2	4	5	-	-	-	20
Venereal " -	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
Ulcers and abscesses -	1	1	1	1	1	2	6	-	-	-	13	-	1	1	-	3	4	-	-	-	-	9
Wounds and injuries -	3	4	3	4	6	3	4	-	-	-	27	-	5	8	6	3	6	5	-	-	-	33
Ebriety - - -	2	3	6	2	-	-	1	-	-	-	14	2	-	9	-	-	-	-	-	-	-	11
All other diseases - -	3	7	6	3	1	2	-	Evacuated for Florida.	-	-	22	8	3	2	3	1	1	2	-	-	-	20
Total - - -	35	42	51	23	26	21	24	-	-	-	222	28	33	44	25	27	43	20	-	-	-	220

Under the class of diseases of the respiratory organs are comprised 102 catarrh, 24 pneumonia, 27 pleuritis, and 3 phthisis pulmonalis. Under the class of digestive organs, 30 diarrhœa and dysentery, 60 cholic and cholera, and 10 hepatitis. Under the class of diseases of the brain and nervous system, 11 epilepsy, and 11 mania a potu; and under that of venereal affections, 2 gonorrhœa, and 2 syphilis.

The deaths from all causes, according to the Adjutant General's returns, are 17, being nearly four per cent. per annum. Of these, all are reported in the medical returns, viz: three epilepsy, one apoplexy, two phthisis pulmonalis, one typhus, one remittent fever, one cynanche maligna, one scorbutus, one concussion of the brain, and six from causes not designated. The rate of mortality, (four per cent.,) without some explanation, will lead to unauthorized inferences; for, excluding the year 1829, in which are reported 11 deaths, the ratio is only $1\frac{6}{10}$ per cent. In this year, there were three fatal cases of epilepsy and one of apoplexy, all induced by the excessive use of ardent spirits, one of concussion of the brain from a fall upon the ice, also caused by inebriety, one from scurvy, and five from causes not stated, the post being attended by a civil practitioner.

This post is, indeed, a very salubrious one. No disease of a malignant tendency has, at any time during the above ten years, prevailed. Intermittent fever may be said to be unknown; for, although seven cases are reported, yet, as none occurred in the third quarters, it is probable that these cases were originally contracted in other localities. The average of diarrhœa and dysentery is also exceedingly low.

The relative agency of the seasons in the causation of disease in general is shown in the following abstract—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	484	220	455
8 second " -	455	206	453
7 third " -	389	222	573
7 fourth " -	399	220	551
Annual ratio -	432	868	2,009

It thus appears that each man, on an average, has been reported sick once in every six months.

FORT PREBLE.

LATITUDE 43° 38′ N., LONGITUDE 70° 18′ W.

This post is situated on Cape Elizabeth, on the side of Portland harbor opposite the town of the same name. The harbor is about one mile wide at this point, at which it opens directly into the ocean. The fort is elevated about 20 feet above the level of the sea, the grounds in the rear becoming higher, and consisting mostly of masses of bare rock. The soil is dry, hard, and gravelly.

The diseases reported during the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Preble, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	50	62	61	54	48	50	-	57	-	-	382	49	62	58	53	48	66	-	-	-	-	336
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Remittent fever - -	-	-	4	3	-	2	-	-	-	-	9	-	3	8	2	3	4	-	-	-	-	20
Synochal fever - -	-	1	3	-	2	-	-	-	-	-	6	2	-	-	-	-	-	-	-	-	-	2
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Diseases of the respiratory organs - - -	2	3	4	16	2	1	-	-	-	-	28	-	1	9	2	-	4	-	-	-	-	16
Diseases of the digestive organs - -	-	2	1	2	1	2	-	3	-	-	11	5	2	3	3	2	-	-	-	-	-	15
Diseases of the brain and nervous system - -	1	-	1	-	-	-	-	-	-	-	2	-	-	1	1	-	-	-	-	-	-	2
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	2	1	4	1	1	1	-	1	-	-	11	-	1	5	-	-	2	-	-	-	-	8
Venereal affections -	-	5	3	-	-	-	-	-	-	-	8	-	8	6	-	-	-	-	-	-	-	14
Ulcers and abscesses -	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1
Wounds and injuries -	2	7	4	4	4	6	No report.	2	-	-	29	4	4	4	4	4	5	No report.	Evacuated May 30th, for Fort Mitchell.	-	-	25
Ebriety - - -	-	-	-	-	-	-		1	-	-	1	-	-	-	-	-	-			-	-	-
All other diseases - -	6	10	-	-	6	-		2	-	-	24	9	4	4	7	4	6			-	-	34
Total - - -	13	29	25	26	16	12	-	9	-	-	130	20	23	41	19	14	21	-	-	-	-	138

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength	60	60	56	51	45	63	57	-	-	-	392	61	62	54	51	48	62	56	-	-	-	394
Intermittent fever	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Remittent fever	6	3	3	2	-	4	-	-	-	-	18	-	4	3	2	6	-	-	-	-	-	15
Synochal fever	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Typhus fever	-	-	1	-	1	1	-	-	-	-	3	-	-	-	1	-	-	-	-	-	-	1
Diseases of the respiratory organs	-	1	3	1	3	1	1	-	-	-	10	2	4	17	3	5	1	1	-	-	-	33
Diseases of the digestive organs	8	8	6	4	8	7	5	-	-	-	46	-	2	3	2	2	4	2	-	-	-	15
Diseases of the brain and nervous system	1	1	-	-	-	-	2	-	-	-	4	-	2	-	-	-	-	-	-	-	-	2
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	2	1	2	1	1	2	3	-	-	-	12	2	4	1	1	1	3	-	-	-	-	12
Venereal affections	4	6	4	-	-	2	-	-	-	-	16	3	9	-	-	1	-	-	-	-	-	13
Ulcers and abscesses	1	-	-	1	-	-	1	-	-	-	3	-	2	-	-	-	-	-	-	-	-	2
Wounds and injuries	1	3	4	4	4	2	2	-	-	-	20	11	5	4	3	5	-	-	-	-	-	28
Ebriety	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	3	1	-	-	-	4
All other diseases	12	-	6	9	-	2	1	-	-	-	30	10	-	-	-	-	5	-	-	-	-	15
Total	35	23	29	22	21	21	16	-	-	-	167	29	32	28	12	20	16	4	-	-	-	141

Under the class of diseases of the respiratory organs are comprised 49 catarrh and influenza, 12 pneumonia, 18 pleuritis, and 7 phthisis pulmonalis. Under the class of digestive organs, 35 diarrhœa and dysentery, and 39 cholic and cholera. Under the head of diseases of the brain and nervous system, 6 epilepsy, and 2 mania a potu; and under that of venereal affections, 32 gonorrhœa, and 19 syphilis.

The total of deaths, according to the Adjutant General's returns, is 11, being $2\frac{7}{10}$ per cent. per annum. Of these, seven are reported in the medical returns, viz: 2 phthisis pulmonalis, 1 typhus fever, 3 from causes not designated, and 1 drowned; giving, without including the last, a mortality of $1\frac{6}{10}$ per cent.

This station is equally healthful with the preceding one. As no more than four cases of intermittent fever are reported, and as these occurred in the same quarter, it may be assumed that this disease is unknown in this locality. It is found, however, that remittent fever exhibits comparatively a high ratio. The relative agency of the seasons in the causation of disease in general, is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
7 first quarters -	382	130	340
6 second "	336	138	411
7 third "	392	167	426
7 fourth "	394	141	358
Annual ratio	376	576	1,532

Each man, on an average, has consequently been reported sick once in nearly every 8 months.

FORT CONSTITUTION.

LATITUDE 43° 04′ N., LONGITUDE 70° 49′ W.

Situated on a peninsula which forms the most eastern point of the State of New Hampshire, in the county of Rockingham, between two and three miles from Portsmouth, Fort Constitution is washed on the south by the Atlantic, and on the north by the Piscataqua river. The country adjacent is uneven and rocky. Small marshes, some fresh and some salt, as well as peat beds, are found on Great Island, about half a mile distant. The soil is not very productive.

The mean annual quantity of rain, on an average of four years, is 28.85 inches.

The diseases reported during the ten years are comprised in the following abstract.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Constitution, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	55	61	61	50	57	48	59	52	-	-	443	50	59	53	53	53	46	57	-	-	-	371
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Command embarked for Fort Mitchell.	-	-	-
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Synochal " - -	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-		-	-	1
Typhus - " - -	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-		-	-	4
Diseases of the respiratory organs - - -	1	-	-	-	2	-	3	4	-	-	10	4	1	2	-	-	-	-		-	-	7
Diseases of the digestive organs - - -	6	21	4	-	2	1	-	-	-	-	34	-	7	12	-	-	-	3		-	-	22
Diseases of the brain and nervous system - -	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1	1	1		-	-	3
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Rheumatic affections -	-	-	2	1	-	1	-	-	-	-	4	-	1	1	1	1	1	1		-	-	6
Venereal " - -	1	-	5	-	2	-	1	3	-	-	12	-	-	2	3	1	2	2		-	-	10
Ulcers and abscesses -	-	1	1	-	-	1	-	-	-	-	3	1	1	-	-	-	-	1		-	-	3
Wounds and injuries -	1	3	-	-	2	1	1	2	-	-	10	1	-	-	-	-	3	-		-	-	4
Ebrietas - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
All other diseases - -	13	2	2	3	2	1	1	-	-	-	24	-	2	5	3	-	-	-		-	-	10
Total - - -	22	27	14	4	11	5	6	10	-	-	99	10	12	22	7	4	7	8	-	-	-	70

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	57	52	46	51	50	54	55	-	-	-	365	57	53	48	58	51	61	54	-	-	-	382
Intermittent fever - -	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
Diseases of the respiratory organs - - -	3	-	-	-	-	-	-	-	-	-	3	19	1	-	1	-	15	-	-	-	-	36
Diseases of the digestive organs - - -	12	4	3	-	1	2	1	-	-	-	23	2	8	4	-	2	3	1	-	-	-	20
Diseases of the brain and nervous system - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	-	1	-	2	-	1	-	-	-	5	1	-	2	-	-	-	-	-	-	-	3
Venereal " - -	-	4	-	-	2	3	4	-	-	-	13	-	5	3	1	1	2	1	-	-	-	13
Ulcers and abscesses -	-	-	-	-	-	-	1	-	-	-	1	1	-	-	1	-	1	-	-	-	-	3
Wounds and injuries -	1	1	-	1	-	-	1	-	-	-	4	3	2	1	1	1	-	4	-	-	-	12
Ebrietas - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	1	-	1	2	1	-	-	-	-	-	5	-	2	-	-	1	-	3	-	-	-	6
Total - - -	18	9	5	3	6	5	9	-	-	-	55	26	18	10	4	5	22	11	-	-	-	96

Under the class of diseases of the respiratory organs are included 30 influenza and catarrh, 7 pneumonia, 4 pleuritis, and 2 phthisis pulmonalis; under the head of digestive organs, 7 diarrhœa and dysentery, and 82 cholic and cholera; under the class of brain and nervous system, 1 apoplexy, and 1 delirium tremens; and under that of venereal affections, 31 gonorrhœa, and 17 syphilis.

The deaths, according to the post returns, amount to seven, being $1\frac{8}{10}$ per cent. per annum. Of these, six are reported in the medical returns, viz: one pneumonia, one phthisis pulmonalis, one enteritis, one convulsions, one apoplexy, and one asphyxia from submersion; giving, without including the last, a mortality of $1\frac{8}{10}$ per cent.

It is remarked by Assistant Surgeon James H. Sargent, who has been stationed at this post for many years, that "it is so healthy that the hospital is seldom occupied"—a fact plainly evident from the abstract given above. A case of fever is, indeed, a rare phenomenon. But one case of intermittent fever is reported, and this came from Fortress Monroe. There is no case of remittent fever. Of inflammatory fever there are two, and of typhus six cases are reported.

Dr. Sargent observes that in 33 years' practice he has known, at this post or its vicinity, but one case of intermittent fever which was not of foreign origin.

On referring to the history of this post prior to 1829, it will be found that in the third quarter of 1825 nearly every man in the command was attacked with cholic and cholera morbus, but that no case terminated fatally. No cause was assigned.

The following abstract exhibits the relative agency of the seasons in the causation of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters,	443	99	226
7 second "	371	70	189
7 third "	365	55	151
7 fourth "	382	96	251
Annual ratio	390	320	821

Consequently every man, on an average, has been reported sick but once in every seventeen months and a half.

FORT INDEPENDENCE.

LATITUDE 42° 22′ N., LONGITUDE 71° 2′ W.

This post, situated on Castle Island in the harbor of Boston, occupies an eminence of 40 feet above the sea. The island, which has a hard and gravelly soil, is in dimensions 1,000 by 900 feet, having a sandy tongue running off 700 feet. It is distant three miles southeast from the Statehouse. The nearest land on the west is the extreme point of West Boston, known by the name of Dorchester point, which is three-fourths of a mile distant. On the south, the nearest point is Thompson's Island, distant one mile and a half; and one mile north is Governour's Island, which overlooks Fort Independence 60 feet, and, in military language, commands it.

"In point of situation," it was remarked by Assistant Surgeon Mann in 1827, "no post can be more salubrious than this, inasmuch as the tide ebbs and flows from 10 to 14 feet, and there are no stagnant waters in the vicinity to generate infectious miasmata productive of autumnal fever. Since I have been stationed here, there have been two seasons of epidemic pneumonia; the first in the spring of 1821, and the last, which was accompanied with many severe cases, in the spring of 1826. These epidemics were not confined to this post, but extended over the New England States, and, if I am not mistaken, as far south as Virginia."

The following abstract comprises the diseases reported in ten years—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Independence, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	120	176	152	61	55	-	-	-	-	-	564	155	168	142	56	53	-	-	-	-	-	574
Intermittent Fever -	-	1	1	-	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	3
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Synochal " - -	9	3	7	2	-	-	-	-	-	-	21	9	14	6	-	-	-	-	-	-	-	29
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - -	18	28	18	23	13	-	-	-	-	-	100	18	3	18	5	3	-	-	-	-	-	47
Diseases of the digestive organs - - -	8	19	12	11	3	-	-	-	-	-	53	34	24	31	18	3	-	-	-	-	-	110
Diseases of the brain and nervous system -	2	1	-	7	-	-	-	-	-	-	10	-	4	3	1	-	-	-	-	-	-	8
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	3	12	4	6	-	-	-	-	-	-	25	13	9	4	1	-	-	-	-	-	-	27
Venereal " - -	7	3	7	1	2	-	-	-	-	-	20	4	5	3	2	-	-	-	-	-	-	14
Ulcers and abscesses -	3	4	1	2	-	-	-	-	-	-	10	10	3	2	1	-	-	-	-	-	-	16
Wounds and injuries -	11	11	21	15	3	-	-	-	-	-	61	12	17	16	14	1	-	-	-	-	-	60
Ebrietas - - -	-	-	2	-	-	-	-	-	-	-	2	1	2	2	-	-	-	-	-	-	-	5
All other diseases -	11	11	11	8	6	-	-	-	-	-	47	13	10	11	37	14	-	-	-	-	-	85
Total - - -	72	93	84	75	27	-	-	-	-	-	351	114	95	97	79	21	-	-	-	-	-	406

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	164	160	132	61	53	-	-	-	-	-	570	170	147	53	56	-	-	-	-	-	-	426
Intermittent fever -	2	2	-	-	-	-	-	-	-	-	4	3	3	1	-	-	-	-	-	-	-	7
Remittent " -	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Synochal " -	8	5	3	-	-	-	-	-	-	-	16	6	7	1	-	-	-	-	-	-	-	14
Typhus " -	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - -	17	11	15	3	3	-	-	-	-	-	49	42	16	31	5	-	-	-	-	-	-	94
Diseases of the digestive organs - - -	38	31	50	52	4	-	-	-	-	-	175	15	2	8	3	-	-	-	-	-	-	28
Diseases of the brain and nervous system -	1	1	3	2	-	-	-	-	-	-	7	-	3	6	-	-	-	-	-	-	-	9
Dropsies - - - -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	12	9	12	2	1	-	-	-	-	-	36	11	10	4	-	-	-	-	-	-	-	25
Venereal " -	8	3	4	1	-	-	-	-	-	-	16	4	12	6	1	-	-	-	-	-	-	23
Ulcers and abscesses -	12	-	-	1	-	-	-	-	-	-	13	4	1	5	-	-	-	-	-	-	-	10
Wounds and injuries -	22	20	18	8	7	-	-	-	-	-	75	15	6	9	4	-	-	-	-	-	-	34
Ebriety - - -	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
All other diseases -	10	7	16	41	14	-	-	-	-	-	88	15	4	8	24	-	-	-	-	-	-	51
Total - - -	132	90	122	110	29	-	-	-	-	-	483	116	64	79	37	-	-	-	-	-	-	296

Troops transferred to Fort Monroe.

Under the class of diseases of the respiratory organs are comprised 33 catarrh, 222 pneumonia, 39 pleuritis, and 8 phthisis pulmonalis. Under the head of digestive organs, 172 diarrhœa and dysentery, and 81 cholic and cholera. Under the class of brain and nervous system, 20 epilepsy, and 9 delirium tremens; and under that of venereal affections, 43 gonorrhœa, and 30 syphilis.

The deaths, according to the Adjutant General's returns, number 13, being $2\frac{2}{10}$ per cent. per annum. Of these, 9 are reported in the medical returns, viz: one pneumonia, two phthisis pulmonalis, one marasmus, three from causes not designated, and two casualties, (one from suicide and the other from drowning,) giving, excluding the two last, an annual mortality of $1\frac{4}{10}$ per cent.

The only fact in the history of disease at this post requiring comment is the remarkable prevalence of pleuritis and pneumonia compared with catarrh. The ratio of the first two is eight times higher than the last; whereas it has been seen that the general law, as deduced from seven posts on the lakes, shows that the ratio of catarrh is six times higher than the average of pleuritis and pneumonia; whilst a similar comparison of the class of posts now under consideration, excluding this station, shows that the ratio of the former is five times higher than that of the latter. As but one death from pneumonia, however, is reported, it is apparent that the lesions registered under this nosological term must have been of a slight grade of intensity.

The relative agency of the seasons in the causation of disease in general is exhibited as under—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
5 first quarters -	564	351	622
5 second " -	574	406	707
5 third " -	570	483	847
4 fourth " -	426	296	695
Annual ratio	533	1,536	2,882

Hence every man, on an average, has been reported sick once in every four months.

FORT WOLCOTT.

LATITUDE 41° 30′, LONGITUDE 71° 18′.

This fort is situated on Goat Island, which is 150 yards wide and half a mile long, within the harbor of Newport. It is two miles from the sea-shore, and half a mile from the town of Newport on the island of Rhode Island. The surface of Goat Island consists of a rich mould, elevated about 20 feet above the ocean. The drainage is good. On the southeast, distant about a mile, is a salt marsh half a mile square; and on the northeast, somewhat nearer than the former, is a lagoon, into which the tide flows constantly. In regard to barrack accommodations, the men occupy rooms 20 feet square, with thick and arched walls, the second story, constructed of wood, being occupied as officers' quarters.

The diseases reported during the usual period of ten years are contained in the subjoined table—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Wolcott, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	55	58	59	51	55	38	63	50	-	-	429	55	57	49	42	50	37	59	-	-	-	349
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-		-	-	3
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Synochal " - -	2	3	1	1	-	-	2	-	-	-	9	3	-	1	1	-	-	4		-	-	9
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Diseases of the respiratory organs - -	8	2	3	8	10	5	6	4	-	-	46	-	2	2	1	-	2	11		-	-	18
Diseases of the digestive organs - - -	1	2	1	-	4	1	1	1	-	-	11	4	3	5	1	5	1	7		-	-	26
Diseases of the brain and nervous system - -	-	-	-	2	-	-	-	-	-	-	2	1	3	-	2	1	-	-		-	-	7
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Rheumatic affections -	2	1	3	1	1	-	1	-	-	-	9	2	2	2	-	1	-	-		-	-	7
Venereal " -	-	1	3	1	-	-	-	-	-	-	5	-	-	2	-	-	-	-		-	-	2
Ulcers and abscesses -	4	-	-	-	-	1	1	-	-	-	6	-	1	4	-	1	-	1		-	-	7
Wounds and injuries -	2	3	2	1	1	1	1	1	-	-	12	-	-	1	2	1	2	1		-	-	7
Ebriety - - -	-	-	9	10	-	6	-	-	-	-	25	-	3	9	6	6	5	3		-	-	32
All other diseases - -	4	4	2	1	6	3	5	-	-	-	25	2	-	1	2	2	1	5		-	-	13
Total - - -	23	16	24	25	22	17	17	6	-	-	150	15	14	27	15	17	11	32	-	-	-	131

May 22, evacuated for Fort Mitchell.

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength	56	57	41	49	44	57	58	-	-	-	362	59	60	42	60	43	65	53	-	-	-	382
Intermittent fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Remittent fever	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Synochal fever	-	-	-	-	-	2	-	-	-	-	2	3	4	-	-	-	2	-	-	-	-	9
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs	-	1	3	1	-	-	4	-	-	-	9	4	2	4	2	1	28	8	-	-	-	49
Diseases of the digestive organs	10	5	6	1	5	14	8	-	-	-	49	3	1	2	1	1	4	-	-	-	-	12
Diseases of the brain and nervous system	-	3	3	1	-	-	-	-	-	-	7	2	1	1	2	-	-	-	-	-	-	6
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	3	-	-	-	-	3	-	-	-	-	6	3	-	-	1	-	2	1	-	-	-	7
Venereal "	-	1	2	-	-	-	-	-	-	-	3	1	1	-	-	-	-	-	-	-	-	2
Ulcers and abscesses	-	1	-	-	-	1	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	1
Wounds and injuries	-	4	1	2	-	4	1	-	-	-	12	3	1	1	3	4	6	-	-	-	-	18
Ebriety	7	6	4	9	11	8	1	-	-	-	46	-	-	-	7	-	2	1	-	-	-	10
All other diseases	7	1	1	3	-	7	-	-	-	-	19	3	7	-	6	5	2	2	-	-	-	25
Total	27	22	20	17	16	40	14	-	-	-	156	22	17	8	22	11	47	13	-	-	-	140

Under the class of diseases of the respiratory organs are included 93 catarrh, 17 pneumonia, 5 pleuritis, and 2 phthisis pulmonalis; under the head of digestive organs, 64 diarrhœa and dysentery, and 14 cholic and cholera; under the class of brain and nervous system, 2 epilepsy, and 11 delirium tremens; and under that of venereal affections, 11 gonorrhœa, and 1 syphilis.

The total of deaths, according to the post returns, is 5, being 1 $\frac{2}{10}$ per cent. per annum. Of these, all are reported in the medical returns, viz: 2 phthisis pulmonalis, 1 mania a potu, and 2 asphixia from submersion. In 1832, when the fatal case of delirium tremens was reported, it is remarked by Assistant Surgeon Wm. Turner, that it is the first death that occurred in five years in an average of more than 100 persons, including engineer officers and their families, as well as the families of enlisted men; and this death he regards virtually a case of suicide. In 1834, in reporting a death from drowning, Dr. Turner speaks thus:—"The only three deaths amongst the troops in seven years, have occurred one from delirium tremens and the other two from accidental drowning whilst in a state of intoxication." In reporting a fatal case of phthisis pulmonalis in the second quarter of 1835, it is again remarked that this case and one of mania a potu are the only two deaths from disease in the period of eight years, amongst the troops, including the officers of the corps of engineers and their families.

It is observed by Assistant Surgeon Turner that no epidemic ever prevails at this station. So complete an exemption is there from all febrile affections, with the exception of simple inflammatory fevers, that he never met, in the course of thirty years' practice, with a single case of intermittent fever which could not be traced to foreign origin. Of remittent fever, there is but one case reported. There are many cases of "febricula from intemperance" registered, all of which are placed under the head of ebriety. Indeed, what little disease prevails among the troops at this post is ascribed by Dr. Turner mostly to the abuse of spirituous liquors.

The following abstract exhibits the relative agency of the seasons in the causation of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	429	150	350
7 second " -	349	131	375
7 third " -	362	156	431
7 fourth " -	382	140	367
Annual ratio -	380	577	1,519

Hence every man, on an average, is reported sick once in every eight months. It is observed, however, by Assistant Surgeon Turner, that none but hospital patients are included in his quarterly sick reports.

FORT TRUMBULL.

LATITUDE 41° 22′ N., LONGITUDE 72° 05′.

This fort is situated on the right bank of the River Thames, one mile below New London, and two and a half miles from the shore of Long Island Sound. It is elevated fifty feet above the level of the ocean, the position is rocky, and the drainage good. The river opposite the fort is about half a mile wide; and within the same distance from the fort, are two small salt marshes. The soil of the surrounding country is rather sterile, presenting an undulating aspect, rising in prominent ridges of eighty or one hundred feet, with rock frequently breaking forth abruptly upon its surface.

The following abstract comprises the diseases reported in the ten years—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Trumbull, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	52	118	118	56	55	55	126	55	-	-	635	100	-	110	55	57	71	123	-	-	-	516
Intermittent fever - -	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1	-	4	-	-	-	-	9
Remittent fever - -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		-	-	-
Synochal fever - -	-	-	3	2	-	-	-	-	-	-	5	-	-	2	2	-	-	-		-	-	4
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Diseases of the respiratory organs - - -	2	2	11	-	2	4	16	8	-	-	45	2	-	5	1	2	1	12		-	-	23
Diseases of the digestive organs - - -	8	4	5	6	1	16	-	-	-	-	40	5	-	5	2	8	4	2		-	-	26
Diseases of the brain and nervous system - -	-	-	-	-	-	1	-	1	-	-	2	-	-	-	-	-	2	-		-	-	2
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Rheumatic affections -	2	2	2	2	4	2	-	1	-	-	15	3	-	2	2	1	-	3		-	-	11
Venereal affections -	-	2	7	3	1	-	-	-	-	-	13	2	-	3	2	-	-	-		-	-	7
Ulcers and abscesses -	1	-	-	-	1	-	-	-	-	-	2	-	-	-	-	2	1	1		-	-	4
Wounds and injuries -	4	2	5	3	5	7	9	2	-	-	37	-	No report.	3	2	3	2	5		-	-	15
Ebriety - - -	-	-	-	-	1	-	-	-	-	-	1	-		-	-	-	4	-		-	-	4
All other diseases - -	8	10	25	15	2	6	11	1	-	-	78	10		16	19	-	12	13	May 23d, embarked for Fort Mitchell.	-	-	70
Total - - -	25	23	58	31	17	36	36	13	-	-	239	26	-	36	31	16	30	36	-	-	-	175

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	110	108	103	58	72	109	117	-	-	-	677	118	104	50	57	55	128	76	-	-	-	588
Intermittent fever - -	4	3	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-
Remittent fever - -	-	-	2	-	1	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
Synochal fever - -	-	-	2	1	-	-	-	-	-	-	3	-	2	3	-	-	-	-	-	-	-	5
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	1	4	4	-	1	3	16	-	-	-	29	3	4	5	2	1	14	2	-	-	-	31
Diseases of the digestive organs - - -	7	6	7	5	15	10	4	-	-	-	54	8	5	-	4	27	7	-	-	-	-	51
Diseases of the brain and nervous system - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	3	1	2	2	-	-	1	-	-	-	9	3	2	-	1	1	3	1	-	-	-	11
Venereal affections -	3	2	3	-	-	-	1	-	-	-	9	2	-	-	-	1	-	-	-	-	-	3
Ulcers and abscesses -	-	1	-	1	-	2	-	-	-	-	4	-	-	-	-	1	-	-	-	-	-	1
Wounds and injuries -	3	2	4	2	3	5	15	-	-	-	34	-	4	4	2	9	6	4	-	-	-	29
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	13	12	11	10	2	23	13	-	-	-	84	10	12	20	4	3	22	6	-	-	-	77
Total - - -	34	31	35	21	22	44	50	-	-	-	237	26	29	32	13	43	52	13	-	-	-	208

Under the head of diseases of the respiratory organs are comprised 95 catarrh, 6 pneumonia, 16 pleuritis, and 8 phthisis pulmonalis; under the class of digestive organs, 56 diarrhœa and dysentery, and 47 cholic and cholera; under the head of brain and nervous system, 2 epilepsy, and 1 mania a potu; and under that of venereal affections, 26 gonorrhœa, and 6 syphilis.

The total of deaths, according to the Adjutant General's returns, is 13, being a little above two per cent. per annum. Of these, 7 are reported in the medical returns, viz: 4 phthisis pulmonalis, 1 dropsy, 1 atrophia induced by intemperance, and one compression of the brain from a rupture of a blood vessel, making about one per cent. of mortality.

This post still maintains the character of salubrity found on the coast of New England. Fevers of malarial origin are scarcely known. In the second quarter of 1832, 15 cases of "spotted fever" are reported, none of which proved fatal. In the neighboring town of New London, there occurred between three and four hundred cases, which terminated fatally in the ratio of about four per cent. It was treated with powerful stimulants both internally and externally. The epidemic seems to have been widely diffused.

The relative agency of the seasons as regards the ætiology of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
8 first quarters -	635	239	376
6 second " -	516	175	339
7 third " -	677	237	350
7 fourth " -	588	208	354
Annual ratio -	604	859	1,422

Hence every man, on an average, was reported sick once in nearly every 8½ months. Contrary to a general law, this table exhibits a higher ratio of diseases in the first and fourth than in the second and third quarters. The absence of morbific agents of a malarial nature, may have some share in the explanation of this result.

FORT COLUMBUS.

LATITUDE 40° 42′, LONGITUDE 74° 02′.

This post is on Governor's Island, in the harbor of New York. This island, situated near the confluence of the Hudson and that arm of Long Island Sound called the East river, is distant from the main, at the nearest point, about half a mile, and from the ocean at Sandy Hook about 20 miles. It is about a mile in circumference, with a soil composed of sand, intermixed with fine gravel and loam, based upon ferruginous clay. The portion brought under cultivation yields in abundance the usual esculent vegetables of the climate. There are no swamps or marshes in the vicinity, and in consequence of the regular artificial slope in every direction from the fort to the water, the drainage is perfect. Exclusive of ten large cisterns, capable of containing many thousand gallons, it is abundantly supplied with excellent water from five wells.

This post constitutes the last of the class now under examination, embracing those situated on our northern Atlantic coast. "The prevailing winds," says Assistant Surgeon J. P. Russell, who has furnished these facts in relation to the medical topography of this post, "are, during the summer, south to south-west, and during the winter, north-west to northeast; the mean temperature for the year is about 53° of fahrenheit, and the annual quantity of rain is from 36 to 40 inches." This island is almost constantly fanned by refreshing and invigorating breezes from the ocean.

A new hospital on the south side of the island is now being finished. Well constructed and commodiously arranged, it combines all the advantages of modern improvements. The wards are furnished with iron bedsteads, an improvement now being generally introduced in our hospitals and barracks.

The diseases reported during the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Columbus, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	240	244	238	60	76	83	90	50	-	-	1081	199	239	222	80	80	88	90	-	-	-	998
Intermittent fever - -	1	-	1	-	1	-	-	-	-	-	3	-	-	3	4	10	7	12	-	-	-	36
Remittent fever - -	1	1	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	2
Synochal fever - -	-	-	-	-	2	-	-	-	-	-	2	-	-	-	3	-	-	-	-	-	-	3
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	15	24	23	4	5	6	19	2	-	-	98	7	32	41	8	1	10	3	-	-	-	102
Diseases of the digestive organs - - -	4	5	4	1	3	8	3	3	-	-	31	2	8	17	20	16	7	1		-	-	71
Diseases of the brain and nervous system - -	-	1	-	-	4	-	-	-	-	-	5	-	-	-	1	-	-	2	Embarked for Florida.	-	-	3
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
Rheumatic affections -	1	5	3	5	1	1	1	3	-	-	20	3	3	3	7	1	-	7		-	-	24
Venereal " -	11	10	17	3	6	5	4	-	-	-	56	9	10	12	1	6	-	1		-	-	39
Ulcers and abscesses -	1	1	-	-	-	-	-	1	-	-	3	-	3	1	-	2	2	1		-	-	9
Wounds and injuries -	12	19	5	3	-	8	8	6	-	-	61	8	14	25	10	13	3	10		-	-	83
Ebriety - - -	-	-	-	-	1	-	7	-	-	-	8	-	-	-	-	1	-	4		-	-	5
All other diseases - -	39	31	58	15	6	3	13	3	-	-	168	65	79	90	7	10	10	4		-	-	265
Total - - -	85	97	111	31	29	31	55	18	-	-	457	94	149	192	63	60	39	45	-	-	-	642

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	203	224	224	76	75	45	60	-	-	-	907	239	229	76	74	70	62	56	-	-	-	806
Intermittent fever - -	3	-	4	4	7	-	7	-	-	-	25	3	2	-	3	1	7	3	-	-	-	19
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-	-	-	-	4
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	51	7	9	-	1	2	4	-	-	-	74	48	34	13	2	8	4	1	-	-	-	110
Diseases of the digestive organs - - - -	12	35	60	48	31	3	15	-	-	-	204	6	6	2	9	7	15	3	-	-	-	48
Diseases of the brain and nervous system - -	-	-	-	-	-	1	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	8	5	1	-	5	-	4	-	-	-	23	4	8	2	1	3	4	1	-	-	-	23
Venereal " -	9	4	6	-	1	-	-	-	-	-	20	16	10	5	5	1	-	1	-	-	-	38
Ulcers and abscesses -	-	1	1	-	1	-	2	-	-	-	5	3	2	-	-	1	1	1	-	-	-	8
Wounds and injuries -	10	4	7	5	11	2	4	-	-	-	43	20	6	1	12	6	3	2	-	-	-	50
Ebriety - - -	-	-	-	1	2	-	3	-	-	-	6	-	-	-	1	1	3	3	-	-	-	8
All other diseases - -	73	109	94	1	1	22	4	-	-	-	304	24	74	17	5	5	7	23	-	-	-	155
Total - - -	166	165	182	59	60	30	44	-	-	-	706	127	142	40	39	33	44	38	-	-	-	463

Under the head of diseases of the respiratory system are included 358 catarrh, 2 pneumonia, 12 pleurisy, and 9 phthisis pulmonalis; under the class of digestive organs, 258 diarrhœa and dysentery, and 37 cholic and cholera; under the head of brain and nervous system, 2 epilepsy, and 2 mania a potu; and under that of venereal affections, 95 gonorrhœa and 91 syphilis.

The total of deaths in the harbor of New York, including Forts Columbus and Hamilton, according to the Adjutant General's returns, is 35, and as the mean strength for the same period is 1,444, the annual mortality is $2\frac{4}{10}$ per cent. Of these, 26 are reported in the medical returns, (15 at Fort Columbus and 11 at Fort Hamilton,) viz. 9 epidemic cholera, 5 phthisis pulmonalis, 1 variola, 1 paralysis, 1 sudden, 1 suicide, 2 casualties, and 6 from causes not designated. Excluding the cases of cholera, casualties, and of suicide, the ratio of mortality is about 1 per cent. As the post returns include New York harbor in the aggregate, it has been found almost impracticable to determine the precise strength of each post.

That the position is salubrious is, however, plainly manifest. "Remittent and intermittent fevers," says Assistant Surgeon Russell, "are of rare occurrence, and never fairly attributable to this station. I have never known a case of either which may be said to have originated here."

The relative agency of the seasons in the production of disease in general is shown in the following abstract—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	1,081	457	423
7 second " -	998	642	643
7 third " -	907	706	779
7 fourth " -	806	463	574
Annual ratio -	948	2,268	2,393

It thus appears that every man, on an average, has been reported sick once in every five months.

There are two other posts in the harbor of New York, which have from time to time been occupied; but the reports are not sufficiently numerous to authorize the usual tabular arrangement. *Fort Wood* is situated on Bedlow's Island, which contains an area of about seven acres. It is upwards of two miles from the city of New York, and a mile and a half from the shores of New Jersey and of Long Island. The fort occupies the most elevated part of the island, which is about 30 feet above high water-mark. It is old and in a state of dilapidation. The hospital accommodations are tolerably good; but the building is so located, that it is liable to have its lower floors inundated by extraordi-

nary high tides. The mean annual quantity of rain, on an average of four years, is 54.43 inches. This island of late years has been a depot for the majority of the recruits of the whole army. This post has always been remarkably salubrious—fevers of malarial origin, except cases which arose from causes operating in other localities, are unknown. Whilst intermittent and remittent fevers have prevailed to a great extent within a few miles, on Long and Staten Islands, as in the year 1828, this station has always maintained its healthfulness.

The other post is *Fort Hamilton*, situated on the Narrows, at Long Island, about seven miles from the city of New York. Contrary to the results given by the other posts of this class, the ratio of malarial diseases is found to be high. It is a remarkable fact that the laborers employed in 1828 in the erection of this post—a locality which had been previously exempt from the effects of malaria—suffered greatly from intermittent and remittent fevers. The elevated coast of Long Island, in the vicinity of the Narrows, where a case of intermitting fever was unknown in the memory of the oldest inhabitant, became so rife with intermittent and remittent fever as to drive the inhabitants from their possessions. The former disease is still very prevalent at Fort Hamilton. In the third quarter of 1834, in a strength of 200, 100 cases are reported; and in the third quarter of 1835, in a strength of 150, 147 cases are reported.

Having finished the examination of the series of posts on our northern Atlantic coast, constituting the second class, a general view of the results obtained will now be presented conformably to the plan adopted in the preceding class.

The following table exhibits the mortality of each post and the relative degree of sickness—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Fort Sullivan	432	17	17	868	2,009
" Preble	376	11	6	576	1,532
" Constitution	390	7	5	320	821
" Independence	533	13	7	1,536	2,882
" Wolcott	380	5	3	577	1,519
" Trumbull	604	13	7	859	1,422
" Columbus	948	18	9	2,268	2,393
Aggregate	3,663	84	54	7,004	-
Ratio per 1,000	-	20*	15	-	1,912

* This result is based on an aggregate mean strength of 4,279.

The annual ratio of mortality, according to the medical reports, is $1\frac{6}{10}$ per cent., and, according to the Adjutant General's returns, 2 per cent. As in the preceding class, the deaths from epidemic cholera (four at Fort Columbus) have been excluded, and in the medical returns, such deaths also as arose from suicide and drowning. As the ratio per 1,000 of mean strength under treatment is 1,915, it follows that each man, on an average, has been reported sick once in every six months. Although the extent of sickness, as indicated by the number admitted on the sick list, is a little less than in the region of the lakes, yet the mortality is about 50 per cent. higher. In looking over the details of each post, the most striking fact is, the low ratio of those that die from what may be regarded as natural causes. Perhaps four-fifths of the deaths are reported under the names of epilepsy, apoplexy, mania a potu, phthisis pulmonalis, atrophia, etc., with the remark to each case that it arose from the abuse of spirituous liquors. It may with truth be said, that nine-tenths of the mortality at the salubrious posts along the coast of New England has its origin in inebriating potations.

In further illustration of the climate of this coast, and of the relative agency of the seasons in the causation of abnormal action, the tabular views in reference to certain diseases having a close relation with meteorological phenomena, adopted in the preceding class, will be now continued.

TABLE exhibiting the relative influence of the

DISEASES.	Fort Sullivan.	Fort Preble.	Fort Constitution.	Fort Independence.	Fort Wolcott.	Fort Trumbull.	Fort Columbus.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter	3	–	–	2	–	–	3	8	4018	2
Second "	2	–	–	3	3	9	36	53	3599	15
Third "	–	4	1	4	–	7	25	41	3662	11
Fourth "	2	–	–	7	1	–	19	29	3377	9
Annual ratio	7	4	1	16	4	16	83	131	3663	36
REMITTENT FEVER.										
First quarter	2	9	–	–	–	1	2	14	4018	3
Second "	8	20	–	1	–	–	2	31	3599	9
Third "	5	18	–	1	1	3	–	28	3662	8
Fourth "	2	15	–	–	–	–	4	21	3377	6
Annual ratio	17	62	–	2	1	4	8	94	3663	26
SYNOCHAL FEVER.										
First quarter	5	6	1	21	9	5	2	49	4018	12
Second "	1	2	1	29	9	4	3	49	3599	14
Third "	2	–	–	16	2	3	–	23	3662	6
Fourth "	8	1	–	14	9	5	–	37	3377	11
Annual ratio	16	9	2	80	29	17	5	158	3663	43
TYPHUS FEVER.										
First quarter	–	–	–	–	–	–	–	–	4018	–
Second "	1	1	4	1	–	–	–	7	3599	2
Third "	4	3	–	1	–	–	–	8	3662	2
Fourth "	–	1	2	1	–	–	–	4	3377	1
Annual ratio	5	5	6	3	–	–	–	19	3663	5
DIARRHŒA AND DYSENTERY.										
First quarter	2	2	–	22	4	10	16	56	4018	14
Second "	2	2	–	36	11	8	35	94	3599	26
Third "	18	31	6	101	40	29	172	397	3662	108
Fourth "	8	–	1	13	9	9	35	75	3377	22
Annual ratio	30	35	7	172	64	56	258	622	3663	170

seasons in the production of morbid action, &c.

DISEASES.	Fort Sullivan.	Fort Preble.	Fort Constitution.	Fort Independence.	Fort Wolcott.	Fort Trumbull.	Fort Columbus.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter - -	30	17	3	14	40	36	92	218	4018	63
Second " - - -	23	6	1	5	11	15	93	149	3599	49
Third " - - -	11	5	–	8	4	21	69	110	3662	36
Fourth " - - -	38	21	26	6	38	23	104	250	3377	85
Annual ratio -	102	49	30	33	93	95	358	727	3663	233
PNEUMONIA.										
First quarter - -	7	3	3	85	4	2	2	21	4018	6
Second " - - -	1	3	–	22	1	1	–	6	3599	2
Third " - - -	2	2	3	31	2	2	–	11	3662	3
Fourth " - - -	14	4	1	84	10	1	–	30	3377	10
Annual ratio -	24	12	7	222	17	6	2	68	3663	22
PLEURITIS.										
First quarter - -	6	8	–	10	–	6	–	20	4018	6
Second " - - -	7	5	4	19	5	3	4	28	3599	9
Third " - - -	5	1	–	7	–	3	4	13	3662	4
Fourth " - - -	9	4	–	3	–	4	4	21	3377	7
Annual ratio -	27	18	4	39	5	16	12	82	3663	26
PHTHISIS PULMONALIS.										
First quarter - -	2	–	1	1	–	1	2	6	4018	2
Second " - - -	–	2	–	3	–	2	5	9	3599	3
Third " - - -	–	2	–	3	1	3	–	6	3662	2
Fourth " - - -	1	3	1	1	–	2	2	9	3377	3
Annual ratio -	3	7	2	8	1	8	9	30	3663	9
RHEUMATISM.										
First quarter - -	12	11	4	25	9	15	20	96	4018	24
Second " - - -	18	8	6	27	7	11	24	101	3599	28
Third " - - -	14	12	5	36	6	9	23	105	3662	29
Fourth " - - -	20	12	8	25	7	11	23	101	3377	30
Annual ratio -	64	43	18	113	29	46	90	403	3663	110

TABL

DISEASES.	m.	
INTERMITTENT F		
First quarter		
Second "		
Third "		
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features analogous
in relation to pulmo-
affections in the first
and 85, and in the second and
of pleuritis and pneumonia, the
manifest, the ratios of the four quar-
and 16. Among the diseases reported
it is not found, either in this or
seasons exert any control as respects the
northern Atlantic coast with the region of the lakes,
ratio of intermittent fever stands as 36 to 193.
may appear, it will be found that the
this contrast may appear, inasmuch as most of the cases occurred
too high, from malarial regions. At Fort Columbus, for
about two-thirds of the cases are reported, it is
by Assistant Surgeon J. P. Russell, that he has never known a
originate. It may be safely averred that along the coast of New
intermittent fever is unknown. In regard to remittent and ty-
fever, there is little difference exhibited in the ratios of these re-
regions. The average of synochal fever is more than twice as
on the ocean as on the lakes, whilst the ratio of diarrhœa and dys-
is 50 per cent. lower.

Compared with the region of the lakes, it is seen that the ratio of pulmonary diseases is somewhat lower on the Atlantic coast. This difference arises wholly from the comparative prevalence of catarrh and influenza; for, if the results of Fort Independence, which are contrary to the general laws of this class, are excluded, the mean ratio of pleuritis, pneumonia, and phthisis pulmonalis, is the same as in the preceding class.

III. THE INTERIOR POSTS, REMOTE FROM LARGE BODIES OF WATER.

This class embraces those stations of the northern division which are remote from the Atlantic ocean as well as inland seas. Compared with the two preceding, it is characterized by great extremes of temperature, by seasons strongly contrasted, and a corresponding dryness of the atmosphere. The seasons follow each other in constant and rapid succession; summer succeeds winter so rapidly that there is scarcely any spring; and the phenomena of vegetation are developed with remarkable suddenness. The prevailing weather is fair, notwithstanding the annual quantity of rain is much greater at some of these posts than at those of the opposite localities; for in the latter the rain, though falling more frequently, descends in slighter showers. The climate of this class of posts, excepting the most southern ones, is distinguished for the extreme severity of winter. From November to May, cold weather prevails, the ground being generally covered with snow to the depth of 3 or 4 feet. The general range of the thermometer is from the freezing point to 30° below zero. The summers are equally remarkable for extremes of

temperature. During June, July, and August, the heat is often as oppressive as in Florida, the mercury sometimes rising to 100° of fahrenheit in the shade. This class embraces the following posts: Hancock Barracks, West Point, Forts Snelling, Winnebago, Crawford, Armstrong, and Leavenworth.

HANCOCK BARRACKS.

LATITUDE 46° 5′ N., LONGITUDE 67° 40′ W.

Hancock Barracks, according to a topographical description furnished by Assistant Surgeon Sprague, is situated in the town of Houlton, Maine. It is distant from the ocean 156 miles, and from the bay of Fundy 180 miles. The surrounding country presents an undulating aspect. The position seems to the eye to be circumscribed by a range of hills, intersected at two points by the passage of the Meduxnikrag, a small rapid stream which runs through the town half a mile from the fort. In the direction of this river lies a great body of low lands, covered with a dense forest, and chequered with many farms in every stage of improvement. The soil is rather productive. As the fort occupies an elevated position, the drainage is complete.

The season of summer is short, and as frosts frequently occur before its close, the destruction of vegetation is not unusual. In the winter, snow falls to a great depth and lies upon the ground during the whole season. The seasons pass rapidly into each other. On the opening of spring, vegetation is developed with remarkable suddenness. Summer succeeds with a rapid pace; and as the thermometer in winter sinks 30° below zero, so now it may rise to 96° in the shade. The extremes at this post are much greater than in the peninsula of Nova Scotia, owing to the circumstance that the latter has not only an insular climate, but is intersected by lakes and bays. The annual quantity of rain, on an average of three years, is 36.92 inches.

The following abstract comprises the diseases reported in ten years—

TABLE exhibiting the relative influence of the

DISEASES.	Fort Sullivan.	Fort Preble.	Fort Constitution.	Fort Independence.	Fort Wolcott.	Fort Trumbull.	Fort Columbus.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter	3	–	–	2	–	–	3	8	4018	2
Second "	2	–	–	3	3	9	36	53	3599	15
Third "	–	4	1	4	–	7	25	41	3662	11
Fourth "	2	–	–	7	1	–	19	29	3377	9
Annual ratio	7	4	1	16	4	16	83	131	3663	36
REMITTENT FEVER.										
First quarter	2	9	–	–	–	1	2	14	4018	3
Second "	8	20	–	1	–	–	2	31	3599	9
Third "	5	18	–	1	1	3	–	28	3662	8
Fourth "	2	15	–	–	–	–	4	21	3377	6
Annual ratio	17	62	–	2	1	4	8	94	3663	26
SYNOCHAL FEVER.										
First quarter	5	6	1	21	9	5	2	49	4018	12
Second "	1	2	1	29	9	4	3	49	3599	14
Third "	2	–	–	16	2	3	–	23	3662	6
Fourth "	8	1	–	14	9	5	–	37	3377	11
Annual ratio	16	9	2	80	29	17	5	158	3663	43
TYPHUS FEVER.										
First quarter	–	–	–	–	–	–	–	–	4018	–
Second "	1	1	4	1	–	–	–	7	3599	2
Third "	4	3	–	1	–	–	–	8	3662	2
Fourth "	–	1	2	1	–	–	–	4	3377	1
Annual ratio	5	5	6	3	–	–	–	19	3663	5
DIARRHŒA AND DYSENTERY.										
First quarter	2	2	–	22	4	10	16	56	4018	14
Second "	2	2	–	36	11	8	35	94	3599	26
Third "	18	31	6	101	40	29	172	397	3662	108
Fourth "	8	–	1	13	9	9	35	75	3377	22
Annual ratio	30	35	7	172	64	56	258	622	3663	170

seasons in the production of morbid action, &c.

DISEASES.	Fort Sullivan.	Fort Preble.	Fort Constitution.	Fort Independence.	Fort Wolcott.	Fort Trumbull.	Fort Columbus.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter - -	30	17	3	14	40	36	92	218	4018	63
Second " - - -	23	6	1	5	11	15	93	149	3599	49
Third " - - -	11	5	–	8	4	21	69	110	3662	36
Fourth " - - -	38	21	26	6	38	23	104	250	3377	85
Annual ratio -	102	49	30	33	93	95	358	727	3663	233
PNEUMONIA.										
First quarter - -	7	3	3	85	4	2	2	21	4018	6
Second " - - -	1	3	–	22	1	1	–	6	3599	2
Third " - - -	2	2	3	31	2	2	–	11	3662	3
Fourth " - - -	14	4	1	84	10	1	–	30	3377	10
Annual ratio -	24	12	7	222	17	6	2	68	3663	22
PLEURITIS.										
First quarter - -	6	8	–	10	–	6	–	20	4018	6
Second " - - -	7	5	4	19	5	3	4	28	3599	9
Third " - - -	5	1	–	7	–	3	4	13	3662	4
Fourth " - - -	9	4	–	3	–	4	4	21	3377	7
Annual ratio -	27	18	4	39	5	16	12	82	3663	26
PHTHISIS PULMONALIS.										
First quarter - -	2	–	1	1	–	1	2	6	4018	2
Second " - - -	–	2	–	3	–	2	5	9	3599	3
Third " - - -	–	2	–	3	1	3	–	6	3662	2
Fourth " - - -	1	3	1	1	–	2	2	9	3377	3
Annual ratio -	3	7	2	8	1	8	9	30	3663	9
RHEUMATISM.										
First quarter - -	12	11	4	25	9	15	20	96	4018	24
Second " - - -	18	8	6	27	7	11	24	101	3599	28
Third " - - -	14	12	5	36	6	9	23	105	3662	29
Fourth " - - -	20	12	3	25	7	11	23	101	3377	30
Annual ratio -	64	43	18	113	29	46	90	403	3663	110

Under the class of diseases of the respiratory organs are comprised 437 catarrh, 39 pneumonia, 83 pleuritis, and 9 phthisis pulmonalis; under the head of digestive organs, 264 diarrhœa and dysentery, 96 cholic and cholera, and 12 hepatitis; under the class of brain and nervous system, 13 epilepsy, and 7 mania a potu; and under that of venereal affections, 12 gonorrhœa, and 17 syphilis.

The total of deaths, according to the Adjutant General's returns, is 17; the annual ratio of mortality being one per cent. Of these, 10 are reported in the medical returns, viz. 4 phthisis pulmonalis, 1 pneumonia, 1 hœmoptysis, 1 hepatic abscess, 2 from causes not designated, and 1 frozen, making, excluding the last, a mortality of about $\frac{6}{10}$ per cent. Two of the cases of phthisis were confirmed drunkards, and the frozen man lay all night in a snow bank intoxicated.

This station presents a very salubrious locality. As there is no marsh in the vicinity, and the current of streams is rapid, there are no diseases of malarial origin. The average of diarrhœa and dysentery is higher, however, than might have been *a priori* supposed. The vice of intemperance is the most prolific source of disease and death.

The relative agency of the seasons, in the production of disease in general, is shown in the following abstract—

TABLE showing the relative agency of the seasons in the production of disease in general.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
10 first quarters	1,671	799	478
10 second "	1,560	728	466
10 third "	1,630	845	518
10 fourth "	1,672	744	445
Annual ratio -	1,633	3,116	1,908

Consequently every man, on an average, has been reported sick once in upwards of every six months.

WEST POINT.

LATITUDE 41° 23′ 33″, LONGITUDE 73° 51′ 15″.

Situated on the west bank of the Hudson, about midway in that part of the river called the Highlands, it is 50 miles from the ocean, and 170 from Lake Champlain. The public buildings are on a plain about a mile square, elevated 157 feet above the river, having in its rear a range of hills varying in height from 600 to 1400 feet. On each side of the plain there are ravines which serve to carry off the torrents of water which descend from the adjacent hills after heavy rains or spring freshets, a circumstance aided by the gravelly nature of the soil and the continuous slope presented on every side. The nearest marshy ground is on the opposite side of the river, about a mile distant.

As the meteorological data of this post, as well as the preceding one, were used in the "Meteorological Register" by way of illustration, it is sufficient to make the reference. The annual quantity of rain, on an average of four years, is 48.70 inches.

The hospital and barrack accommodations are of the best kind.

The diseases reported in the 10 years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at West Point, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	349	354	371	353	364	368	389	353	338	393	3631	341	354	362	343	351	370	381	344	332	365	3543
Intermittent fever -	7	-	3	1	2	-	-	-	-	-	13	12	-	-	10	-	2	-	-	-	-	24
Remittent " - -	3	-	-	-	-	-	-	-	-	-	3	-	-	-	1	3	-	2	-	-	-	6
Synochal " - -	1	5	13	16	8	10	46	6	19	-	124	17	13	16	3	10	11	32	3	3	14	122
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	150	117	111	61	20	140	33	49	67	128	876	109	117	111	52	85	41	8	43	49	71	686
Diseases of the digestive organs - - -	103	39	83	143	31	76	56	65	65	51	712	104	88	96	49	44	67	26	101	27	57	659
Diseases of the brain and nervous system -	82	106	186	145	30	104	27	102	82	77	941	106	183	230	75	51	104	32	121	78	94	1074
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	8	5	14	13	10	63	-	11	37	16	177	10	5	35	25	27	9	12	31	19	14	187
Venereal " - -	-	-	-	-	-	6	-	6	-	9	21	1	-	-	3	2	3	1	3	4	8	25
Ulcers and abscesses -	13	6	8	6	6	20	6	9	1	12	87	8	-	7	-	16	9	8	36	12	15	111
Wounds and injuries -	15	22	30	52	34	81	24	35	23	28	344	32	59	82	63	63	63	40	47	47	65	561
Ebrietas - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases -	43	47	70	54	48	78	31	25	88	51	535	65	41	115	94	31	35	38	70	57	41	587
Total - - -	426	347	518	491	189	578	223	308	382	372	3834	464	506	692	375	332	344	199	455	296	379	4042

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	420	395	381	400	385	384	376	357	402	398	3898	378	390	390	381	373	397	373	365	416	402	3865
Intermittent fever -	10	5	-	2	8	2	2	2	1	4	36	-	9	10	5	-	1	3	10	-	-	38
Remittent " -	3	-	-	-	-	-	-	-	-	-	3	-	-	-	-	15	-	-	-	-	-	15
Synochal " -	8	11	14	6	16	26	41	12	9	19	162	6	20	16	4	-	2	15	1	5	5	74
Typhus " -	-	1	-	-	-	1	1	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	111	208	83	29	21	44	9	18	52	36	611	119	237	246	30	26	265	43	134	96	69	1265
Diseases of the digestive organs - - -	137	170	109	187	97	169	61	100	125	72	1227	67	85	176	75	35	27	37	73	78	49	702
Diseases of the brain and nervous system -	84	161	162	39	80	78	30	106	119	77	936	150	123	132	26	59	34	46	100	118	49	837
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	23	24	26	8	30	25	7	22	26	7	198	7	5	16	10	29	7	5	19	19	9	126
Venereal " -	-	-	-	5	16	4	17	13	9	10	74	-	-	10	-	4	1	10	3	4	3	35
Ulcers and abscesses -	10	-	10	26	28	27	14	67	25	43	250	13	5	-	10	3	4	35	-	25	6	101
Wounds and injuries -	27	42	94	36	71	76	35	80	34	118	613	19	30	30	25	33	34	38	22	55	43	329
Ebriety - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases -	104	71	47	46	42	71	47	77	171	51	727	71	96	64	22	52	48	58	67	48	40	566
Total - - -	517	693	545	384	409	523	264	497	571	437	4840	452	610	700	207	256	423	290	429	448	273	4088

Under the class of diseases of the respiratory organs are comprised 3,073 catarrh and influenza, 76 pneumonia, 34 pleuritis, and 7 phthisis pulmonalis; under the head of diseases of the digestive organs, 1,023 diarrhœa and dysentery, and 1,445 cholic and cholera; and under the class of venereal affections, 129 gonorrhœa, and 26 syphilis.

The total of deaths, according to the post returns, is 13, viz: 3 officers, 2 professors, 4 cadets, 1 ordnance storekeeper, and 3 soldiers, the annual ratio of mortality being a fraction upwards of $\frac{8}{10}$ per cent. Exclusive of these, 6 cadets died in different parts of the United States, perhaps all of them on sick leave. Of the former, 9 are reported in the medical returns, viz: 3 phthisis pulmonalis, 1 sudden rupture of an abscess in the lungs, (a teacher of drawing who was treating his own case by means of animal magnetism,) 1 scarlatina, 2 continued fever, 1 typhus, and 1 wound of the brain.

Although it will be seen that the average of cases treated is higher than at any other station, yet an examination of the above abstract, in connexion with the ratio of mortality, warrants the opinion that this post holds a place among the first in point of salubrity. It is remarked by Surgeon W. V. Wheaton, who has been stationed here 12 years, that the locality is singularly exempt from all local causes of disease, and that among 800 persons for weeks together, there is often no one seriously sick. To estimate properly the high ratio of disease, compared with the low mortality, it must be borne in mind that this command, with the exception of a detachment of enlisted men never exceeding 50, is composed of cadets, and that the simple circumstance of being registered on the hospital books affords respite from all mental and bodily labor. Of the 16,804 cases reported, the majority consists of such complaints as headache, toothache, cough, pain in the chest, and sore throat. Of headache alone there are 3,788 cases registered; and as this affection, in default of a better nosological arrangement, has been placed under the head of brain and nervous system, it appears that there are but five other cases in the same class. Of the 482 cases of synochal fever, about 200 are reported under the name of ephemeral, and nearly all the rest as inflammatory. Several diseases have, at certain periods, assumed an endemic character. In the first quarter of 1835, there are 46 cases of cynanche tonsillaris reported; and in the first quarter of 1837, 59 cases of cynanche parotidea. In the second quarter of 1832, the sick report exhibits 30 cases of measles confined to the cadets and soldiers. As regards the influence of age on mortality, it has been ascertained, that at the period of life between the age of 10 and 15 the ratio is lowest, and next in the order of increase comes the interval between 15 and 20. Cadets belong to the latter class, of which the annual ratio of mortality, per 1,000 is, in England $7\frac{8}{10}$, in Belgium $6\frac{8}{10}$, and in Sweeden 7. Now as four cadets died at the academy, one death being the result of a wound, and six when on leave, the total arising from disease, admitting that all the latter may be fairly ascribed to causes operating at the post, may be set down as nine; and assuming the aggregate mean strength of cadets to be 3,234, that is, deducting 50 annually for officers and soldiers,

the ratio is only $2\frac{8}{10}$ per 1,000. As contrasted with civil life, the result is, therefore, highly favorable to the regulations of this institution.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
10 first quarters -	3,631	3,834	1,056
10 second " -	3,543	4,042	1,141
10 third " -	3,898	4,840	1,242
10 fourth " -	3,865	4,088	1,058
Annual ratio -	3,734	16,804	4,500

Consequently every one has been, on an average, reported sick once in every $2\frac{2}{3}$ months—the highest ratio yet presented.

FORT SNELLING.

LATITUDE 44° 53′ N., LONGITUDE 93° 1′ W.

Fort Snelling, situated in the angle formed by the confluence of the St. Peter's and Mississippi, is elevated 94 feet above these waters, and about 820 feet above the level of the ocean. The St. Peter's, at its mouth, is 150 yards wide and 16 feet deep; and the Mississippi, at this point, is about 400 yards wide, but is much less deep than the former. The banks of the latter, up to the falls of St. Anthony, a distance of eight miles, are about 200 feet high, the upper strata of which consist of limestone, and the lower of sandstone. Beyond the falls the banks are less high, and the immediate valley of the river becomes more extended. The St. Peter's, which has its source about 500 miles from this point, courses through a valley, varying in breadth from one to three miles, which is marshy, owing to the inundation of the river. The surface of the surrounding country presents an undulating prairie, studded here and there with "islands" of timber. Large lakes, plentifully supplied with fish, are occasionally found. The soil, although sandy, is productive. These facts have been furnished by Assistant Surgeon John Emerson.

As the data of this post have been constantly used for the purpose of elucidating the various systems of climate, the necessity of any detail now is wholly superseded. The mean annual quantity of rain, on an average of three years, is 30.32 inches.

The diseases reported in ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Snelling, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	183	147	150	153	134	159	165	166	212	78	1547	170	139	145	150	122	147	154	197	181	110	1515
Intermittent fever - -	2	-	-	-	-	1	-	-	-	-	3	-	-	9	1	-	4	-	5	-	-	13
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	1	-	4
Synochal " - -	2	1	-	-	-	1	-	-	1	-	5	4	-	-	-	-	1	1	-	2	-	8
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	6	9	8	26	14	31	34	48	53	5	234	13	27	38	29	18	47	14	51	76	2	315
Diseases of the digestive organs - - -	6	1	12	4	4	24	19	13	11	1	105	9	5	13	13	22	24	39	26	26	1	178
Diseases of the brain and nervous system - -	-	-	-	2	1	4	13	7	2	-	29	-	-	-	1	2	14	20	8	11	-	56
Dropsies - - -	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1
Rheumatic affections -	5	2	10	20	9	22	16	16	4	4	108	-	1	10	9	5	16	52	25	7	2	127
Venereal " - -	3	3	1	-	-	-	-	-	1	3	11	3	2	-	-	2	-	-	5	2	4	18
Ulcers and abscesses -	12	7	2	2	4	4	7	6	2	-	46	15	-	-	5	9	9	6	5	1	-	50
Wounds and injuries -	16	7	17	4	8	29	19	10	12	4	126	11	7	-	11	15	27	13	22	20	5	131
Ebrietas - - -	-	-	6	-	-	-	-	-	-	-	6	-	-	1	-	-	-	-	-	-	-	1
All other diseases - -	7	17	7	12	16	14	24	18	7	4	126	4	14	34	4	12	25	20	14	11	4	142
Total - - -	59	47	63	70	56	140	132	119	93	21	800	59	56	99	75	85	167	165	163	157	18	1044

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	141	161	156	143	118	150	149	132	82	192	1424	150	153	152	141	133	169	164	166	82	189	1499
Intermittent fever - -	3	13	13	-	-	2	1	-	1	-	33	3	9	-	-	1	3	-	-	-	-	16
Remittent " - -	-	-	3	1	-	-	-	9	3	8	24	2	-	1	-	-	-	-	2	-	-	5
Synochal " - -	3	-	-	-	-	-	-	-	-	-	3	-	1	-	-	1	-	-	-	-	-	2
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	3	20	58	12	16	26	9	10	14	37	205	9	16	18	14	26	47	54	45	1	4	234
Diseases of the digestive organs - - -	19	72	29	29	45	18	16	12	14	22	276	6	5	4	21	16	17	18	10	-	3	100
Diseases of the brain and nervous system - -	1	-	2	1	3	7	10	2	-	-	26	1	-	2	3	7	6	4	-	-	-	23
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Rheumatic affections -	5	3	7	13	5	10	20	2	-	8	73	1	7	10	4	17	13	16	9	-	7	84
Venereal " - -	1	7	2	-	2	-	6	-	2	1	21	1	2	-	-	1	-	2	2	-	-	8
Ulcers and abscesses -	4	-	4	8	4	-	4	-	4	2	30	4	7	5	4	9	2	3	1	-	2	37
Wounds and injuries -	8	20	16	15	15	18	13	-	1	5	111	18	10	13	6	21	26	10	4	2	7	117
Ebrietas - - -	-	4	-	-	-	-	-	-	-	-	4	-	1	3	-	-	-	-	-	-	-	4
All other diseases - -	14	14	14	12	14	13	18	12	7	3	121	17	4	20	20	7	21	10	17	4	12	132
Total - - -	61	153	148	91	104	94	97	47	46	86	927	62	62	76	72	107	135	117	90	7	35	763

Under the class of diseases of the respiratory organs are comprised 920 catarrh, 9 pneumonia, 52 pleuritis, and 4 phthisis pulmonalis; under the head of diseases of the digestive organs, 321 diarrhœa and dysentery, 200 cholic and cholera, and 4 hepatitis; under the class of brain and nervous system, 20 epilepsy, 11 nyctalopia, and nearly all the rest cephalalgia; and under that of venereal affections, 46 gonorrhœa and 12 syphilis.

The total of deaths, according to the post returns, is 24, the annual ratio of mortality being $1\frac{6}{10}$ per cent. Of these 13 are reported in the medical returns, viz: 1 phthisis, 2 remittent fever, 1 meningitis, 2 gunshot wounds, 2 casualties, 1 drowned, 1 suicide, and 3 from causes not designated. Excluding those reported from accidental causes, the average of mortality is less than $\frac{6}{10}$ per cent.

The diseases of this post require no special comment. As morbid action generally assumes a purely philogistic character, the therapeutic means are correspondingly simple. The relative agency of the seasons in the production of disease in general is shown in the following abstract—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
10 first quarters -	1,547	800	517
10 second " -	1,515	1,044	689
10 third " -	1,424	927	651
10 fourth " -	1,499	763	509
Annual ratio	1,496	3,534	2,362

Every man, on an average, has consequently been reported sick once in about every five months.

FORT WINNEBAGO.

LATITUDE 43° 31′ N., LONGITUDE 89° 28′ W.

This fort is situated on the right bank of Fox river, directly opposite the portage between this river and the Wisconsin, and is elevated about 70 feet above the level of the latter. It is 81 miles west of Lake Michigan, and 112 southwest of Green Bay. Both the Fox and Wisconsin are bordered by extensive marshes, which are occasionally inundated, so that boats pass from one river to the other.

"The formation of these marshes," says Surgeon Foot, "is a subject of much speculation. In cutting through the thick vegetable matter on the surface, from two to four feet thick, you come to a stratum of soft mud, generally a foot or two in thickness. In a few places, however,

this stratum of mud and water is from eight to ten feet deep. These are known by the name of "shaking marshes," and are dangerous to cross with horses. They appear, however, to be filling up from the same causes that have made the others more solid."

Beneath the mud and water is a stratum of fine silicious sand, which is believed by Dr. Foot to be of animalcular origin. He supposes these marshes to have been originally shallow lakes or lagoons, full of aquatic plants, which were then, as now, covered with myriads of animalculæ, whose shell is pure silex. As these die annually, each one deposites its particle of silex, until, in the process of time, the lagoon becomes filled up, having below a stratum of sand, and above an imperfectly organized soil, formed by the annually decaying vegetation.

"The soil of the upland about this post," says Dr. F., "is a light loam, mixed with silex, lime, and clay. It is what is called a *warm soil*, and vegetation comes forward earlier than at any place in the same latitude I have ever been stationed at. The mineral productions are very few: secondary limestone and sandstone of recent formation are the only rocks that I have ever seen."

The annual quantity of rain, on an average of three years, is 31.88 inches.

The following abstract comprises the diseases reported in ten years—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Winnebago, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	98	143	142	186	133	231	210	204	99	89	1535	97	147	191	169	121	215	188	164	92	121	1505
Intermittent fever - -	-	-	3	-	-	1	-	-	-	1	5	4	-	10	-	-	1	3	-	1	3	22
Remittent fever - -	-	2	-	-	-	2	2	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-
Synochal fever - -	3	-	-	-	-	-	-	-	-	-	3	-	4	-	-	-	-	-	-	-	-	4
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Diseases of the respiratory organs - - -	12	12	7	10	10	25	46	16	30	7	175	3	10	4	2	3	8	22	12	16	17	97
Diseases of the digestive organs - - -	4	2	18	8	13	13	10	11	3	6	88	12	16	16	5	14	18	11	13	15	23	143
Diseases of the brain and nervous system - -	-	-	2	-	-	1	-	-	-	-	3	1	-	-	-	-	-	-	-	-	1	2
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	2	10	5	2	5	3	4	-	1	33	-	8	6	1	3	4	4	2	1	6	35
Venereal affections -	-	1	1	1	8	1	-	3	-	1	16	-	-	1	1	-	6	-	3	-	8	19
Ulcers and abscesses -	-	-	2	-	-	3	11	32	1	1	50	-	-	2	-	2	7	5	-	3	-	19
Wounds and injuries -	11	6	14	6	2	6	13	6	7	7	78	7	6	14	6	7	1	10	6	10	11	78
Ebriety - - -	-	-	-	-	-	-	-	3	1	-	4	-	-	-	-	-	3	2	6	-	1	12
All other diseases - -	8	7	27	4	7	7	8	11	1	11	91	12	14	9	3	4	1	7	15	4	16	85
Total - - -	39	32	84	34	42	64	93	86	43	35	552	39	58	62	18	33	49	65	57	50	86	517

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength	156	160	193	160	186	210	217	121	68	56	1527	156	148	188	153	213	214	215	103	76	105	1571
Intermittent fever	2	16	4	-	-	1	2	-	-	3	28	-	9	-	-	2	2	-	1	-	7	21
Remittent fever	-	-	2	-	-	-	-	-	2	1	5	4	-	-	2	-	-	-	-	-	4	10
Synochal fever	4	2	-	-	-	8	-	-	-	-	14	-	1	-	-	-	-	-	-	-	-	1
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs	20	-	5	26	8	10	12	2	4	6	93	12	16	10	10	38	30	10	6	8	1	141
Diseases of the digestive organs	31	21	8	28	18	32	44	14	15	15	226	5	12	4	9	16	12	11	9	5	7	90
Diseases of the brain and nervous system	-	-	-	-	-	3	-	-	-	-	3	-	1	-	-	-	-	-	-	1	-	2
Dropsies	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	5	1	-	2	1	2	3	1	-	-	15	1	2	2	-	6	8	5	-	1	1	26
Venereal affections	2	1	2	2	5	6	2	14	2	1	37	2	2	-	2	1	1	1	14	4	-	27
Ulcers and abscesses	1	-	1	1	3	4	-	1	1	-	12	-	1	1	-	7	3	-	1	1	-	14
Wounds and injuries	15	14	7	5	-	5	21	7	6	3	83	-	12	4	1	3	13	20	10	2	8	73
Ebriety	-	-	-	-	2	2	7	-	-	-	11	-	-	-	-	-	3	1	2	1	3	10
All other diseases	10	4	11	-	4	1	14	7	3	-	54	13	16	9	1	5	4	8	6	7	11	80
Total	90	59	40	64	41	74	105	46	33	29	581	37	72	30	25	78	76	56	49	30	42	495

Under the class of diseases of the respiratory organs are comprised 448 catarrh, 11 pneumonia, 29 pleuritis, and 10 phthisis pulmonalis; under the head of digestive organs, 193 diarrhœa and dysentery, 149 cholic and cholera, and 17 hepatitis; under the class of brain and nervous system, 1 epilepsy and 2 mania a potu; and under that of venereal affections, 66 gonorrhœa, and 33 syphilis.

The total of deaths, according to the post returns, is 20; the annual ratio of mortality being $1\frac{8}{10}$ per cent. Of these, 14 are reported in the medical returns, viz. 3 phthisis pulmonalis, 1 pleuritis, 2 chronic hepatitis, 1 gastro-enteritis, 1 splenitis, 1 syphilis, 1 ebriety, 1 idiotcy, and 3 from causes not stated, being $\frac{8}{10}$ per cent. Two of these cases occurred in recruits, who were sick when they arrived; and of the remaining fatal cases, the majority is, as usual, ascribed to the abuse of alcoholic liquors.

From a general view of the above facts, it is manifest that this station is highly salubrious. When it is considered that marshes abound in the immediate vicinity of this post, it is surprising that diseases of malarial origin are not more rife. "I have never thought," says Surgeon Foot, "that the marshes about this post produced disease, till last fall, [1838.] Last year the Wisconsin overflowed its banks in the latter part of July, covering all the extensive marshes bordering the Wisconsin and Fox rivers with water for two or three weeks. All plants, except aquatic, were killed. This was succeeded by excessively hot and dry weather, during the month of August and part of September, when we had a number of cases of intermittent and remittent fever, which, I think, were caused by the decomposition of the vegetable matter on the marshes." The results obtained from the statistics of ten years do not, however, warrant the conclusion that these marshes are generally the sources of miasmata in the summer season. It is only when those meteorological causes, which are essential to the production of what is called malaria, are peculiarly favorable, that intermittent or remittent fever prevails.

The annexed abstract presents the relative agency of the seasons in the etiology of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
10 first quarters -	1,535	552	360
10 second " -	1,505	517	343
10 third " -	1,527	581	380
10 fourth " -	1,571	495	315
Annual ratio -	1,534	2,145	1,398

Every man, on an average, is consequently reported sick once in every eight months and a half.

FORT CRAWFORD.

LATITUDE 43° 5′, LONGITUDE 90° 55′ W.

Fort Crawford, situated on the Mississippi, two miles above the mouth of the Wisconsin, is on Prairie du Chien. This prairie, lying in the angle formed by these two rivers, is about 10 miles long and 2 wide, terminating on the east by a range of abrupt hills about 300 feet in height. These bluffs present almost a naked surface, studded with boldly projecting rocks. The fort, which is about 300 yards from the Mississippi, is elevated 70 feet above its level. Directly in front of the fort is a marsh, which extends 5 miles up the river, and about as far down as the mouth of the Wisconsin. This marsh, or slough, which exists only during the low water of the summer and autumnal months, not unfrequently so abounds with putrid vegetable matter as to be extremely offensive. The soil, which is generally fertile, producing wheat, corn, rye, oats, and potatoes, abundantly, consists of a dark loam combined with lime and silex. Lead, iron, and copper, are found at many points; and among the productions of the forest, different varieties of *quercus*, (oak,) *acer*, (maple,) *betula*, (birch,) *salix*, (willow,) *juglans*, (walnut,) and *carya*, (hickory,) stand most prominent.

This post, as regards temperature, differs in no respect from the general character of the class. The annual quantity of rain, on an average of 3 years, is 29.54 inches.

The diseases reported in ten years are contained in the following table—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Crawford, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - - -	111	199	175	227	107	250	261	267	-	63	1660	130	188	211	141	185	228	225	224	159	58	1749
Intermittent fever - -	-	2	4	5	-	3	4	3	-	-	21	1	1	24	6	-	17	1	15	3	1	69
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	3
Synochal " - -	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	11	10	12	45	8	91	77	54	-	8	316	7	23	14	17	37	46	60	38	26	6	274
Diseases of the digestive organs - - -	8	14	8	10	1	21	25	17	-	-	104	11	27	31	7	55	41	19	21	12	3	227
Diseases of the brain and nervous system - -	-	-	-	3	1	3	2	-	-	1	10	-	-	-	-	3	-	-	-	2	2	7
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	2	5	4	5	4	3	7	6	-	6	42	2	1	13	5	6	4	9	14	7	1	62
Venereal " -	-	3	2	1	-	4	-	-	No report.	8	18	2	3	5	1	1	1	2	3	12	6	36
Ulcers and abscesses -	-	2	4	-	1	16	25	19		1	68	-	1	-	1	-	23	16	20	9	-	70
Wounds and injuries -	8	15	18	15	13	9	12	10		3	103	12	22	9	8	21	17	15	5	3	5	117
Ebriety - - -	-	8	-	-	2	14	8	9		-	41	-	5	-	-	11	22	25	22	-	-	85
All other diseases - -	14	14	32	40	7	30	44	77		5	263	20	30	23	30	28	68	43	54	18	2	316
Total - - -	43	73	84	124	37	195	204	195	-	32	987	55	114	119	75	162	240	190	193	93	26	1267

	THIRD QUARTER.											FOURTH QUARTER.									
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	200	199	251	210	221	225	211	246	59	68	1885	207	183	235	168	239	270	265	182	62	67	1878
Intermittent fever - -	6	136	70	1	7	20	4	1	7	10	262	4	48	14	-	34	10	3	1	3	8	125
Remittent fever - -	-	18	13	1	11	12	2	-	2	2	61	-	-	-	-	10	1	1	-	-	1	13
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Diseases of the respiratory organs - - -	16	22	29	38	9	19	10	21	6	7	177	30	6	40	8	101	102	76	33	7	8	411
Diseases of the digestive organs - - -	39	26	128	46	198	113	51	85	18	18	722	16	12	26	3	35	40	16	10	5	4	167
Diseases of the brain and nervous system - -	1	-	1	11	-	1	-	-	-	2	16	-	-	1	-	-	-	-	-	-	-	1
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
Rheumatic affections -	4	3	6	5	10	10	4	13	2	1	58	3	-	-	-	9	5	16	10	4	-	47
Venereal " - -	6	2	7	2	-	2	3	5	4	13	44	2	-	3	1	1	2	8	3	2	4	26
Ulcers and abscesses -	5	1	2	2	2	38	10	9	4	3	76	1	1	2	3	12	43	12	6	2	1	83
Wounds and injuries -	17	16	9	34	31	19	5	2	9	7	149	28	2	12	15	24	15	20	3	10	7	136
Ebriety - - -	11	-	-	-	5	26	17	15	-	-	74	-	-	-	5	2	22	21	23	-	-	73
All other diseases - -	30	37	102	27	8	34	30	35	4	2	309	21	9	64	4	27	18	49	8	5	-	205
Total - - -	135	261	367	167	281	294	136	186	56	65	1948	105	78	162	39	255	258	224	97	38	34	1290

Under the class of diseases of the respiratory organs are included 1,048 catarrh, 28 pneumonia, 75 pleuritis, and 13 phthisis pulmonalis; under the head of digestive organs, 933 diarrhœa and dysentery, and 195 cholic and cholera; under the class of brain and nervous system, 7 epilepsy, and 20 delirium tremens; and under that of venereal affections, 101 gonorrhœa, and 23 syphilis.

The total of deaths, according to the post returns, is 94, the annual ratio of mortality being $2\frac{7}{16}$ per cent. Of these, 35 are reported in the medical returns, making, excluding 6 deaths from epidemic cholera, 4 from gun-shot wounds, and 1 from exposure to low temperature, $1\frac{2}{16}$ per cent. The causes of death, as stated in the medical returns, are as follows: six phthisis pulmonalis, six epidemic cholera, one common cholera, four remittent fever, three dysentery, four gun-shot wounds, two ebriety, two chronic visceral derangement, one sudden, one disease of the heart, one gangrene of the lower extremities from exposure to cold, one casualty, and three from causes not specified. The gun-shot wounds were received in battle in the expedition against Black Hawk. In the third quarter of 1832, there are reported twenty-one cases of gun-shot wounds, received in the action of the 2d of August, on the Mississippi, forty-five miles above this post.

The average of disease at this post is higher than the mean of the stations already examined. When it is considered, however, that those causes regarded as most conducive to the evolution of miasmata exist here abundantly, it seems surprising that fevers of malarial origin are not more rife. Equally remarkable is the fact of the variation in the ratio of these fevers from year to year. Thus, in the third quarter of 1830 there were 154 cases, whilst the same quarter of 1836, with a greater strength, affords but one case. The following table will show the relation between these fevers and meteorological causes at this post—

TABLE showing the relation between fevers and meteorological causes.

Years.	Mean temperature for July.	Mean temperature for August.	Mean of July and August.	Highest degree.	Amount of rain in July and August.	Ratio of cases of intermittent and remittent fever per 100 of mean strength.
1829	74.33	73.76	74.09	94	Unknown.	3
1830	81.47	77.07	79.27	94	"	72
1831	76.56	71.93	74.24	98	"	33
1832	74.41	70.09	72.25	94	"	1
1833	78.83	76.58	77.65	98	"	8
1834	80.49	77.55	79.02	98	"	14
1835	73.80	69.62	71.71	94	"	3
1836	73.00	66.66	69.83	90	5.50 in.	0 4–10
1837	73.83	70.87	72.35	95	5.48 "	17
1838	78.61	73.90	76.26	97	8.24 "	19

Although the essential causes of intermittent and remittent fever may forever remain involved in obscurity, yet the general fact that the average of these fevers is highest in the third quarter of the year, in every

district of the United States, warrants the conclusion that heat and moisture are requisite to develope the causes. In regard to the operation of these causes, however, there exists this striking difference, that heat acts in proportion to the rise of the mercury, whilst excess of moisture is no less inimical to the evolution of miasmata than its deficiency. This law in reference to atmospheric temperature obtains in the table just given. It is seen that the highest mean temperature of July and August, at Fort Crawford, is in 1830, when the ratio of intermittent and remittent fever in the third quarter is 72 per 100 of mean strength, and that the lowest mean temperature is in 1836, when the average of these fevers is only $\frac{4}{10}$. The years 1832 and 1835 are the next lowest both in regard to the mean temperature and the ratio of these fevers. As there are doubtless many modifying causes, the precise influence of elevated temperature cannot be determined in each season.

With the exception of cholera asphyxia, no epidemic has prevailed at this post. In August, 1833, there occurred twenty-three decided cases of cholera, and six deaths, whilst very few wholly escaped its influence. Those cases, in which the premonitory symptoms continued for some time, terminated favorably. In some instances, death ensued in three or four hours after the first attack. For a short time, from forty to fifty were daily reported sick with diarrhœa, and other premonitory symptoms. In the village of Prairie du Chien, twelve or thirteen deaths occurred. It was noticed by Assistant Surgeon R. C. Wood that, in every case there existed a diminution or total suspension of urinary secretion, as was proven by the introduction of the catheter.

The relative agency of the seasons in the production of disease in general is shown in the annexed table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
9 first quarters,	1,660	987	595
10 second " -	1,749	1,267	724
10 third " -	1,885	1,948	1,033
10 fourth " -	1,878	1,270	676
Annual ratio -	1,793	5,472	3,052

Consequently every man, on an average, has been reported sick once in nearly every four months.

FORT ARMSTRONG.

LATITUDE 41° 28′, LONGITUDE 90° 33′.

This fort is situated on Rock Island, which lies in the Mississippi, four miles above the mouth of Rock river. It is two miles long, and about four hundred yards wide, being a rich alluvial bottom based on a substratum of limestone. The diseases reported within the ten years are comprised in the following table—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Armstrong, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	74	102	104	70	58	67	97	94	-	-	666	81	92	95	51	79	52	84	-	-	-	534
Intermittent fever - -	-	1	1	2	-	-	2	-	-	-	6	3	1	20	10	1	1	1	-	-	-	37
Remittent fever - -	2	1	-	-	-	1	-	-	-	-	4	1	4	4	-	-	4	3	-	-	-	16
Synochal fever - -	3	-	-	-	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-	-	-	2
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	20	19	25	10	2	7	20	-	-	105	7	7	20	6	21	1	5	-	-	-	67
Diseases of the digestive organs - - -	5	10	5	4	3	2	2	9	-	-	40	13	13	29	20	35	1	4	-	-	-	115
Diseases of the brain and nervous system - -	2	-	-	1	-	-	-	-	-	-	3	-	1	-	1	4	-	-	-	-	-	6
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	2
Rheumatic affections -	6	9	4	5	5	2	1	1	-	-	33	6	3	18	4	2	-	-	-	-	-	33
Venereal " -	-	1	-	4	-	-	1	-	-	-	6	-	-	1	6	-	-	-	-	-	-	7
Ulcers and abscesses -	3	1	3	1	-	3	1	2	-	-	14	3	1	2	7	4	3	1	Evacuated.	-	-	21
Wounds and injuries -	9	12	24	13	4	2	5	7	-	-	76	11	4	21	15	4	1	-		-	-	56
Ebriety - - -	-	-	-	-	-	-	-	4	-	-	4	-	-	-	-	-	-	-		-	-	-
All other diseases - -	3	4	3	-	5	5	7	6	-	-	33	3	2	15	5	8	2	1		-	-	36
Total - - -	35	59	59	55	27	17	26	49	-	-	327	48	38	130	74	79	13	16	-	-	-	398

	THIRD QUARTER.											FOURTH QUARTER.									
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	101	97	85	-	86	95	101	-	-	-	555	108	110	77	35*	73	108	109	-	-	-	608
Intermittent fever - -	3	20	9	-	4	4	-	-	-	-	40	1	8	1	-	4	4	-	-	-	-	18
Remittent " - -	1	3	-	-	-	24	13	-	-	-	41	-	-	-	-	-	6	4	-	-	-	10
Synochal " - -	1	3	-	-	-	-	-	-	-	-	4	2	-	-	-	-	-	-	-	-	-	2
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	3	5	5	-	7	3	-	-	-	-	23	10	5	12	7	5	13	7	-	-	-	59
Diseases of the digestive organs - - -	19	14	34	-	40	31	75	-	-	-	213	15	9	5	2	4	15	19	-	-	-	69
Diseases of the brain and nervous system - -	1	1	-	-	3	-	-	-	-	-	5	-	-	1	-	1	-	1	-	-	-	3
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	8	3	4	-	4	3	2	-	-	-	24	4	5	3	2	4	4	1	-	-	-	23
Venereal " -	1	-	5	-	-	-	-	-	-	-	6	2	2	2	-	-	1	-	-	-	-	7
Ulcers and abscesses -	2	3	14	No report.	4	2	-	-	-	-	25	1	-	2	1	-	2	1	-	-	-	7
Wounds and injuries -	14	14	19		15	4	6	-	-	-	72	20	26	12	1	10	7	10	-	-	-	86
Ebriety - - -	-	-	-		-	2	3	-	-	-	5	-	-	-	-	-	-	2	-	-	-	2
All other diseases - -	4	13	2		5	3	3	-	-	-	30	1	-	7	5	4	9	2	-	-	-	28
Total - - -	57	79	92	-	82	76	102	-	-	-	488	56	55	45	18	32	61	47	-	-	-	314

* The actual strength was 71, but the troops were at the post only half of the quarter.

Under the class of diseases of the respiratory organs are comprised 209 catarrh, 9 pneumonia, 23 pleuritis, and 3 phthisis pulmonalis; under the head of digestive organs, 208 diarrhœa and dysentery, 145 cholic and cholera, and 6 hepatitis; under the class of brain and nervous system, 6 epilepsy, and 3 delirium tremens; and under that of venereal affections, 22 gonorrhœa, and 4 syphilis.

The total of deaths, according to the Adjutant General's returns, is twenty, the annual ratio of mortality being $3\frac{4}{16}$ per cent. Of these but eight are reported in the medical returns, viz: one mania a potu, one accidental, one frozen, and five from causes not stated. The medical reports from this post are defective in details; and, consequently, no means are afforded of determining the causes of the high mortality given in the post returns. On reference to the abstract exhibiting the diseases reported in ten years, it will be seen that the ratio of intermittent and remittent fever is low, whilst of typhus there is not a single case. In the post returns, seven deaths are reported in September, 1832, which, it is more than probable, arose from epidemic cholera. In the first quarter of 1834 it is noticed that, on the night of the 13th January a man deserted, and when brought back on the 17th, the right foot was mortified as high as the tarsus, and the os-calcis of each extremity was very much injured. On the 18th of March two deserted; and on the following day, both were brought back, one dead and the other torpid.

The relative agency of the seasons in the production of disease in general is exhibited in the annexed abstract—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	666	327	491
7 second " -	534	398	745
6 third " -	555	488	879
7 fourth " -	608	314	516
Annual ratio -	591	1,527	2,584

Hence every man, on an average, has been reported sick once in upwards of every four months and a half.

FORT LEAVENWORTH.

LATITUDE 39° 20′ N., LONGITUDE 95° 05′ W.

This post is situated on the right bank of the Missouri river, about 500 miles above its confluence with the Mississippi. As the Missouri here is not more than 300 yards wide, being one of its narrowest points, the water is deep and the current rapid. This mighty river is at times navigable for steamboats 1,750 miles above the fort, and always, unless obstructed by ice, to its mouth.

The fort stands on a plain elevated about 150 feet above the surface of the river. This plain is the highest point of an undulating prairie, which extends as far south as the eye can reach. The opposite shore is an extensive alluvial bottom, covered with a dense forest of cotton-wood, *(populus canadensis.)* The margin of the river, north of the fort, presents a similar character; but as the prevailing winds are from the south, the full effects of the exhalations from this miasmatic surface are not experienced.

The soil, which is quite productive, consists of a sandy loam, covered with a rich vegetable deposite, the whole based on a strata of clay and limestone.

"The forest," says Surgeon Macomb, "abounds in trees valuable for fuel or timber. With the exception of the pine, almost all kinds are to be found. The most common are the *juglans nigra*, *carya oliveæformis*, *carya alba*, *acer saccharinum*, *acer negundo*, *platanus occidentalis*, *cerasus virginiana*, *morus rubra*, *quercus alba*, etc."

The annual mean of rain and snow, on an average of 3 years, is 32.68 inches.

The diseases reported within the ten years are contained in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Leavenworth, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	280	-	224	204	262	96	208	304	249	300	2127	-	-	215	159	138	85	87	232	303	273	1492
Intermittent fever -	79	-	3	4	9	10	43	38	19	11	216	-	-	15	11	25	15	31	35	85	18	235
Remittent " - -	2	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	2	-	1	1	4
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Typhus " - -	2	-	-	1	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	
Diseases of the respiratory organs - -	57	-	101	82	123	5	14	81	71	45	579	-	-	34	7	6	2	10	14	33	15	121
Diseases of the digestive organs - - -	23	-	10	7	7	1	27	22	27	28	152	-	-	20	21	20	3	16	31	37	31	179
Diseases of the brain and nervous system -	1	-	3	4	-	-	3	-	-	7	18	-	-	3	3	7	-	1	-	2	3	19
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	-	4
Rheumatic affections -	20	Report defective.	26	15	26	3	13	20	5	6	134	Report defective.	Report defective.	4	19	4	5	5	9	20	10	76
Venereal " - -	-		1	-	1	1	2	22	8	14	49			1	1	1	-	2	16	16	16	52
Ulcers and abscesses -	8		5	4	5	2	5	11	8	35	83			1	9	2	1	4	10	28	18	73
Wounds and injuries -	30		14	24	20	11	20	37	26	24	206			32	26	9	5	24	36	32	23	187
Ebriety - - -	-		1	9	6	1	2	-	-	21	40			10	11	4	-	1	-	2	6	34
All other diseases -	41		15	16	4	4	4	28	67	84	263			10	6	7	2	3	33	99	96	256
Total - - -	263	-	180	166	201	38	133	259	231	276	1747	-	-	133	115	85	33	99	184	356	237	1242

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	31*	187	214	91	140	131	-	169	363	220	1546	-	198	210	163	124	219	307	205	342	358	2126
Intermittent fever - -	9	7	36	14	69	56	-	29	39	54	313	-	1	6	18	32	69	43	11	51	76	302
Remittent fever - -	1	-	-	-	-	8	-	-	8	7	24	-	1	-	-	-	4	6	1	9	1	22
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	1	6	1	-	1	-	2	22	2	37	-	13	14	17	14	15	26	25	24	57	205
Diseases of the digestive organs - - -	11	5	40	4	115	8	-	31	263	55	532	-	-	39	19	-	14	47	13	69	100	301
Diseases of the brain and nervous system - -	1	1	3	3	1	-	-	-	6	4	19	-	4	-	5	1	1	-	1	1	8	21
Dropsies - - - -	1	-	-	-	-	-	-	-	-	1		-	3	1	-	-	-	-	-	3	-	7
Rheumatic affections -	-	2	7	-	3	2	-	3	20	-	37	-	6	9	19	4	7	6	6	7	24	88
Venereal affections -	-	-	2	-	1	-		10	15	15	43		-	1	-	2	2	22	8	8	13	56
Ulcers and abscesses -	2	-	4	6	5	1		11	60	29	118		1	3	5	2	9	6	10	24	34	94
Wounds and injuries -	2	8	35	7	16	9		12	43	30	162		9	24	9	10	17	40	23	47	48	227
Ebriety - - - -	-	1	29	4	1	3		-	1	7	46		2	3	7	2	1	-	-	45	3	63
All other diseases - -	2	12	19	10	12	5		31	148	119	358		2	14	11	18	9	78	21	151	135	439
Total - - -	31	37	181	49	223	93	-	129	627	322	1692	-	42	114	105	85	148	274	119	439	499	1825

No report.

* The actual strength is 41, but as the sick-report embraces only two months, 31 becomes the equivalent strength.

Under the class of diseases of the respiratory organs are comprised 842 catarrh, 37 pneumonia, 57 pleuritis, and 19 phthisis pulmonalis; under the head of diseases of the digestive organs, 903 diarrhœa and dysentery, 49 cholic and cholera, and 19 hepatitis; under the class of brain and nervous system, 16 epilepsy, 1 apoplexy, and 8 delirium tremens; and under that of venereal affections, 172 gonorrhœa, and 30 syphilis.

The total of deaths, according to the post returns, is 47, the annual ratio of mortality being $2\frac{4}{10}$ per cent. Of these, 28 are reported in the medical returns, viz. 3 typhus fever, 2 remittent fever, 4 phthisis pulmonalis, 2 pneumonia, 3 cholera epidemica, 3 atrophia, 1 chronic diarrhœa, 1 dysentery, 1 phrenitis, 1 apoplexy, 1 epilepsy, 1 drowned, 1 gun-shot wound, 1 suicide, 1 assassination, and 2 accidental, making, excluding the six last, an annual mortality of $1\frac{4}{10}$ per cent. In the post returns, 19 deaths are reported in 1834, of which no report is made by the medical officer. These fatal cases occurred among the dragoons, who had just returned from an expedition among the Pawnees. In the command of the post proper, there was no death during the year. The result of this year and the subsequent ones cannot be regarded as a fair test of the healthfulness of the locality of Fort Leavenworth, as the dragoons generally made summer campaigns into the country of the Osages, Pottawatamies, &c. In 1833, there occurred 9 cases of epidemic cholera among the mounted rangers at this post, 3 of which proved fatal. This disease, although much diminished in fatality compared with the wide-spread epidemic of the previous year, prevailed very generally along our western frontier. In the first quarter of 1837, "the measles," says Surgeon Macomb, "prevailed among the troops; after which an epidemic catarrh made its appearance, similar to the influenza, and sometimes accompanied with symptoms of the peripneumonia notha of Sydenham." The unusual prevalence of diarrhœa (251 cases) in the third quarter of this year, is ascribed to the moisture and extreme heat of the summer months acting upon unacclimated constitutions, most of the troops being recruits from the east and the north. The post was regarded by the medical officer as "decidedly salubrious."

In a topographical description of this post, it is remarked by Surgeon Macomb, that "the Missouri river is at its highest rise in the month of June, in consequence, as it is supposed, of the melting of the snow in the Rocky Mountains. It continues thus full and overflowing the low grounds until the last of July. On the subsidence of the waters, many low spots in the bottoms are left filled with stagnant water, which the sun rapidly decomposes. Hence we may say that about the 1st of August the season of sickness commences. The diseases are, early in the season, chiefly intermittent fever and dysentery. Subsequently, they assume the remittent type; these are complicated with local congestions, and ultimately become typhoid.

"The treatment is generally indicated by the more urgent symptoms of the disease. Intermittent fever is treated in two stages—1st, during the paroxysm, and 2d, during the apyrexial stage. Emetics, composed

of ipecac 21 grs. and Ant. tart. grs. 3, are exhibited with manifest advantage during the paroxysm, followed up with cathartics of calomel 21 grs. and pulv. jal. grs. 10, sup. tart. pot. et jalap āā 22, senna, manna, and neutral salts. The sulphate of quinine in small doses, during the intermission and after the evacuants, will generally complete the cure.

"Dysentery is usually treated by evacuants, viz. calomel followed by castor oil, blisters on the abdomen, pulv. dov., or cal. opii. et ipecac. combined, in small doses. V. S. is seldom necessary, although cupping is sometimes advantageous.

"When the fevers become congestive, blisters, sudorifics, and counter irritants, are among the best remedies, V. S. and local bleeding in the early stages, and mercureal alteratives in the secondary and latter stages.

"In the typhoid stage, the diffusible and permanent stimulants are usually indicated."

Although this post, considering its relative position, may be justly regarded, at the present day, as decidedly salubrious, yet on reference to the history of its early establishment in 1827 and 1828, it will be seen that the command suffered much from the diseases incident to troops establishing themselves in an uncultivated region.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
9 first quarters -	2,127	1,747	817
8 second " -	1,492	1,242	832
9 third " -	1,546	1,692	1,094
9 fourth " -	2,126	1,825	859
Annual ratio -	1,823	6,506	3,569

Every man has consequently been reported sick, on an average, about once in every three months and a third.

Having concluded the investigation of those stations in the northern region of the United States, remote from the ocean as well as inland seas, and consequently characterized by extremes of temperature and by seasons strongly contrasted, the results obtained from this class will now be stated with the view to general deductions.

The following table exhibits the mortality of each post, and the relative degree of sickness, based on the statistics of ten years—from 1829 to 1839—

Under the class of diseases of the respiratory organs are comprised 448 catarrh, 11 pneumonia, 29 pleuritis, and 10 phthisis pulmonalis; under the head of digestive organs, 193 diarrhœa and dysentery, 149 cholic and cholera, and 17 hepatitis; under the class of brain and nervous system, 1 epilepsy and 2 mania a potu; and under that of venereal affections, 66 gonorrhœa, and 33 syphilis.

The total of deaths, according to the post returns, is 20; the annual ratio of mortality being $1\frac{3}{10}$ per cent. Of these, 14 are reported in the medical returns, viz. 3 phthisis pulmonalis, 1 pleuritis, 2 chronic hepatitis, 1 gastro-enteritis, 1 splenitis, 1 syphilis, 1 ebriety, 1 idiotcy, and 3 from causes not stated, being $\frac{9}{10}$ per cent. Two of these cases occurred in recruits, who were sick when they arrived; and of the remaining fatal cases, the majority is, as usual, ascribed to the abuse of alcoholic liquors.

From a general view of the above facts, it is manifest that this station is highly salubrious. When it is considered that marshes abound in the immediate vicinity of this post, it is surprising that diseases of malarial origin are not more rife. "I have never thought," says Surgeon Foot, "that the marshes about this post produced disease, till last fall, [1838.] Last year the Wisconsin overflowed its banks in the latter part of July, covering all the extensive marshes bordering the Wisconsin and Fox rivers with water for two or three weeks. All plants, except aquatic, were killed. This was succeeded by excessively hot and dry weather, during the month of August and part of September, when we had a number of cases of intermittent and remittent fever, which, I think, were caused by the decomposition of the vegetable matter on the marshes." The results obtained from the statistics of ten years do not, however, warrant the conclusion that these marshes are generally the sources of miasmata in the summer season. It is only when those meteorological causes, which are essential to the production of what is called malaria, are peculiarly favorable, that intermittent or remittent fever prevails.

The annexed abstract presents the relative agency of the seasons in the etiology of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
10 first quarters -	1,535	552	360
10 second " -	1,505	517	343
10 third " -	1,527	581	380
10 fourth " -	1,571	495	315
Annual ratio -	1,534	2,145	1,398

Every man, on an average, is consequently reported sick once in every eight months and a half.

FORT CRAWFORD.

LATITUDE 43° 5′, LONGITUDE 90° 55′ W.

Fort Crawford, situated on the Mississippi, two miles above the mouth of the Wisconsin, is on Prairie du Chien. This prairie, lying in the angle formed by these two rivers, is about 10 miles long and 2 wide, terminating on the east by a range of abrupt hills about 300 feet in height. These bluffs present almost a naked surface, studded with boldly projecting rocks. The fort, which is about 300 yards from the Mississippi, is elevated 70 feet above its level. Directly in front of the fort is a marsh, which extends 5 miles up the river, and about as far down as the mouth of the Wisconsin. This marsh, or slough, which exists only during the low water of the summer and autumnal months, not unfrequently so abounds with putrid vegetable matter as to be extremely offensive. The soil, which is generally fertile, producing wheat, corn, rye, oats, and potatoes, abundantly, consists of a dark loam combined with lime and silex. Lead, iron, and copper, are found at many points; and among the productions of the forest, different varieties of *quercus*, (oak,) *acer*, (maple,) *betula*, (birch,) *salix*, (willow,) *juglans*, (walnut,) and *carya*, (hickory,) stand most prominent.

This post, as regards temperature, differs in no respect from the general character of the class. The annual quantity of rain, on an average of 3 years, is 29.54 inches.

The diseases reported in ten years are contained in the following table—

Under the class of diseases of the respiratory organs are comprised 448 catarrh, 11 pneumonia, 29 pleuritis, and 10 phthisis pulmonalis; under the head of digestive organs, 193 diarrhœa and dysentery, 149 cholic and cholera, and 17 hepatitis; under the class of brain and nervous system, 1 epilepsy and 2 mania a potu; and under that of venereal affections, 66 gonorrhœa, and 33 syphilis.

The total of deaths, according to the post returns, is 20; the annual ratio of mortality being $1\frac{8}{10}$ per cent. Of these, 14 are reported in the medical returns, viz. 3 phthisis pulmonalis, 1 pleuritis, 2 chronic hepatitis, 1 gastro-enteritis, 1 splenitis, 1 syphilis, 1 ebriety, 1 idiotcy, and 3 from causes not stated, being $\frac{8}{10}$ per cent. Two of these cases occurred in recruits, who were sick when they arrived; and of the remaining fatal cases, the majority is, as usual, ascribed to the abuse of alcoholic liquors.

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Under the class of diseases of the respiratory organs are comprised 448 catarrh, 11 pneumonia, 29 pleuritis, and 10 phthisis pulmonalis; under the head of digestive organs, 193 diarrhœa and dysentery, 149 cholic and cholera, and 17 hepatitis; under the class of brain and nervous system, 1 epilepsy and 2 mania a potu; and under that of venereal affections, 66 gonorrhœa, and 33 syphilis.

The total of deaths, according to the post returns, is 20; the annual ratio of mortality being $1\frac{3}{10}$ per cent. Of these, 14 are reported in the medical returns, viz. 3 phthisis pulmonalis, 1 pleuritis, 2 chronic hepatitis, 1 gastro-enteritis, 1 splenitis, 1 syphilis, 1 ebriety, 1 idiotcy, and 3 from causes not stated, being $\frac{9}{10}$ per cent. Two of these cases occurred in recruits, who were sick when they arrived; and of the remaining fatal cases, the majority is, as usual, ascribed to the abuse of alcoholic liquors.

From a general view of the above facts, it is manifest that this station is highly salubrious. When it is considered that marshes abound in the immediate vicinity of this post, it is surprising that diseases of malarial origin are not more rife. "I have never thought," says Surgeon Foot, "that the marshes about this post produced disease, till last fall, [1838.] Last year the Wisconsin overflowed its banks in the latter part of July, covering all the extensive marshes bordering the Wisconsin and Fox rivers with water for two or three weeks. All plants, except aquatic, were killed. This was succeeded by excessively hot and dry weather, during the month of August and part of September, when we had a number of cases of intermittent and remittent fever, which, I think, were caused by the decomposition of the vegetable matter on the marshes." The results obtained from the statistics of ten years do not, however, warrant the conclusion that these marshes are generally the sources of miasmata in the summer season. It is only when those meteorological causes, which are essential to the production of what is called malaria, are peculiarly favorable, that intermittent or remittent fever prevails.

The annexed abstract presents the relative agency of the seasons in the etiology of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
10 first quarters -	1,535	552	360
10 second " -	1,505	517	343
10 third " -	1,527	581	380
10 fourth " -	1,571	495	315
Annual ratio -	1,534	2,145	1,398

Every man, on an average, is consequently reported sick once in every eight months and a half.

FORT CRAWFORD.

LATITUDE 43° 5′, LONGITUDE 90° 55′ W.

Fort Crawford, situated on the Mississippi, two miles above the mouth of the Wisconsin, is on Prairie du Chien. This prairie, lying in the angle formed by these two rivers, is about 10 miles long and 2 wide, terminating on the east by a range of abrupt hills about 300 feet in height. These bluffs present almost a naked surface, studded with boldly projecting rocks. The fort, which is about 300 yards from the Mississippi, is elevated 70 feet above its level. Directly in front of the fort is a marsh, which extends 5 miles up the river, and about as far down as the mouth of the Wisconsin. This marsh, or slough, which exists only during the low water of the summer and autumnal months, not unfrequently so abounds with putrid vegetable matter as to be extremely offensive. The soil, which is generally fertile, producing wheat, corn, rye, oats, and potatoes, abundantly, consists of a dark loam combined with lime and silex. Lead, iron, and copper, are found at many points; and among the productions of the forest, different varieties of *quercus*, (oak,) *acer*, (maple,) *betula*, (birch,) *salix*, (willow,) *juglans*, (walnut,) and *carya*, (hickory,) stand most prominent.

This post, as regards temperature, differs in no respect from the general character of the class. The annual quantity of rain, on an average of 3 years, is 29.54 inches.

The diseases reported in ten years are contained in the following table—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Crawford, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	111	199	175	227	107	250	261	267	-	63	1660	130	188	211	141	185	228	225	224	159	58	1749
Intermittent fever - -	-	2	4	5	-	3	4	3	-	-	21	1	1	24	6	-	17	1	15	3	1	69
Remittent " - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	3
Synochal " - -	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	11	10	12	45	8	91	77	54	-	8	316	7	23	14	17	37	46	60	38	26	6	274
Diseases of the digestive organs - - -	8	14	8	10	1	21	25	17	-	-	104	11	27	31	7	55	41	19	21	12	3	227
Diseases of the brain and nervous system - -	-	-	-	3	1	3	2	-	-	1	10	-	-	-	-	3	-	-	-	2	2	7
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	2	5	4	5	4	3	7	6	-	6	42	2	1	13	5	6	4	9	14	7	1	62
Venereal " -	-	3	2	1	-	4	-	-	No report.	8	18	2	3	5	1	1	1	2	3	12	6	36
Ulcers and abscesses -	-	2	4	-	1	16	25	19		1	68	-	1	-	1	-	23	16	20	9	-	70
Wounds and injuries -	8	15	18	15	13	9	12	10		3	103	12	22	9	8	21	17	15	5	3	5	117
Ebriety - - -	-	8	-	-	2	14	8	9		-	41	-	5	-	-	11	22	25	22	-	-	85
All other diseases - -	14	14	32	40	7	30	44	77		5	263	20	30	23	30	28	68	43	54	18	2	316
Total - - -	43	73	84	124	37	195	204	195	-	32	987	55	114	119	75	162	240	190	193	93	26	1267

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	200	199	251	210	221	225	211	246	59	63	1885	207	183	235	168	239	270	265	182	62	67	1878
Intermittent fever - -	6	136	70	1	7	20	4	1	7	10	262	4	48	14	-	34	10	3	1	3	8	125
Remittent fever - -	-	18	13	1	11	12	2	-	2	2	61	-	-	-	-	10	1	1	-	-	1	13
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Diseases of the respiratory organs - - -	16	22	29	38	9	19	10	21	6	7	177	30	6	40	8	101	102	76	33	7	8	411
Diseases of the digestive organs - - -	39	26	128	46	198	113	51	85	18	18	722	16	12	26	3	35	40	16	10	5	4	167
Diseases of the brain and nervous system - -	1	-	1	11	-	1	-	-	-	2	16	-	-	1	-	-	-	-	-	-	-	1
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
Rheumatic affections -	4	3	6	5	10	10	4	13	2	1	58	3	-	-	-	9	5	16	10	4	-	47
Venereal " - -	6	2	7	2	-	2	3	5	4	13	44	2	-	3	1	1	2	8	3	2	4	26
Ulcers and abscesses -	5	1	2	2	2	38	10	9	4	3	76	1	1	2	3	12	43	12	6	2	1	83
Wounds and injuries -	17	16	9	34	31	19	5	2	9	7	149	28	2	12	15	24	15	20	3	10	7	136
Ebriety - - -	11	-	-	-	5	26	17	15	-	-	74	-	-	-	5	2	22	21	23	-	-	73
All other diseases - -	30	37	102	27	8	34	30	35	4	2	309	21	9	64	4	27	18	49	8	5	-	205
Total - - -	135	261	367	167	281	294	136	186	56	65	1948	105	78	162	39	255	258	224	97	38	34	1290

much more modified, is characterized by variableness. On reference to abstracts A, B, C, of the "Remarks" to the meteorological register, the difference in the climate of the two regions of the middle division, so far as temperature is concerned, may be seen. Thus, Jefferson Barracks shows a greater contrast in the seasons than Washington City; and on comparing Fort Gibson with Fort Monroe, which is 1° 32′ north of the former, a similar result is exhibited.

Of the two classes of posts pertaining to this division, the *first* embraces the stations on the sea-coast and inlets of the ocean between the Delaware and Savannah rivers, viz: Forts Delaware, McHenry, Severn, Washington, and Monroe, Bellona Arsenal, Forts Moultrie, and Johnston, and Oglethrope Barracks; and the *second* comprises the interior posts, viz: Jefferson Barracks, Forts Gibson, Smith, and Coffee, Towson, and Jesup.

I. THE ATLANTIC COAST.

FORT DELAWARE.

LATITUDE 39° 35′, LONGITUDE 75° 29′.

Fort Delaware is situated on a mud island, formed by the deposition of alluvion in the Delaware. The soil is of such a spongy nature that any heavy body will gradually sink for several days. It is four miles from Newcastle, and about forty miles below Philadelphia.

The diseases reported within the ten years are condensed in the subjoined abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Delaware, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	65	119	99	116	-	-	-	-	-	-	399	102	106	94	70*	-	-	-	-	-	-	372
Intermittent fever - -	-	6	-	1	-	-	-	-	-	-	7	4	4	12	3	-	-	-	-	-	-	23
Remittent fever - -	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	16
Synochal fever - -	4	-	7	-	-	-	-	-	-	-	11	2	-	-	-	-	-	-	-	-	-	2
Typhus fever - -	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	7	2	2	23	-	-	-	-	-	-	34	9	1	4	3	-	-	-	-	-	-	17
Diseases of the digestive organs - -	1	34	4	6	-	-	-	-	-	-	45	8	21	-	1	-	-	-	-	-	-	30
Diseases of the brain and nervous system - -	1	3	1	-	-	-	-	-	-	-	5	3	2	5	-	-	-	-	-	-	-	10
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	1	3	2	-	-	-	-	-	-	7	2	2	1	1	-	-	-	-	-	-	6
Venereal affections -	1	3	1	4	-	-	-	-	-	-	9	9	1	3	-	-	-	-	-	-	-	13
Ulcers and abscesses -	-	1	2	-	-	-	-	-	-	-	3	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries -	1	5	-	4	-	-	-	-	-	-	10	10	-	1	1	-	-	-	-	-	-	12
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases - -	3	12	3	6	-	-	-	-	-	-	24	20	2	1	3	-	-	-	-	-	-	26
Total - - -	20	67	23	46	-	-	-	-	-	-	156	85	33	29	12	-	-	-	-	-	-	159

* Average mean strength for two months.

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	116	95	91	-	-	-	-	-	-	-	302	116	87	126	-	-	-	-	-	-	-	329
Intermittent fever - -	31	96	12	-	-	-	-	-	-	-	139	35	1	11	-	-	-	-	-	-	-	47
Remittent " - -	36	-	4	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	3	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	2
Diseases of the respiratory organs - - -	1	-	-	-	-	-	-	-	-	-	1	6	1	18	-	-	-	-	-	-	-	25
Diseases of the digestive organs - - -	28	20	3	-	-	-	-	-	-	-	51	20	12	-	-	-	-	-	-	-	-	32
Diseases of the brain and nervous system - -	3	4	-	-	-	-	-	-	-	-	7	6	2	2	-	-	-	-	-	-	-	10
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	6	-	3	-	-	-	-	-	-	-	9	1	1	1	-	-	-	-	-	-	-	3
Venereal " - -	2	-	1	-	-	-	-	-	-	-	3	5	-	4	-	-	-	-	-	-	-	9
Ulcers and abscesses -	1	-	1	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries -	15	2	2	-	-	-	-	-	-	-	19	14	1	2	-	-	-	-	-	-	-	17
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases - -	8	3	5	-	-	-	-	-	-	-	16	13	3	5	-	-	-	-	-	-	-	21
Total - - -	134	125	31	-	-	-	-	-	-	-	290	103	21	45	-	-	-	-	-	-	-	169

Evacuated.

Under the class of diseases of the respiratory organs are comprised 55 catarrh, 2 pneumonia, 6 pleuritis, and 11 phthisis pulmonalis; under the head of digestive organs, 21 diarrhœa and dysentery, 87 cholic and cholera, and 20 hepatitis; under the class of brain and nervous system, 1 epilepsy, and 4 mania a potu; and under that of venereal affections, 25 gonorrhœa, and 9 syphilis.

As the total of deaths, according to the post returns, is eleven, and the aggregate mean strength is three hundred and fifty, the annual ratio of mortality is a fraction above three per cent. All of the deaths are reported in the medical returns, viz: two remittent fever, one intermittent fever and anasarca combined, two phthisis pulmonalis, one pneumonia typhoides, two delirium tremens, one cynanche maligna, one aneurism of the aorta, and one ulcer in ano. Although the ratio of mortality is high, yet the causes of death are, in most instances, not ascribable to climate or local position. The high average of intermittent fever, in the summer of 1829 and 1830, is attributed to the marsh mud thrown up from a marsh ditch encircling the island. The annual ratio of intermittent fever is sixty-two per cent., and that of remittent fever is sixteen per cent. In 1831, many cases of the most obstinate constipation of the bowels were reported both at this post and at Fort Severn, followed in some instances by paralysis of the hand and fore-arm. It was ascribed to the white lead used by the men in cleaning their belts and gloves. As it was necessary to moisten the material, and apply it by means of a sponge, the hands were daily exposed to its action. As the belts were also rubbed with pumice stone, particles of the lead may have been inhaled. It became necessary to abandon its use, substituting pipe clay. This post, in consequence of a conflagration, was evacuated on the 9th of February, 1831. The troops remained at Delaware City until the 28th of the same month, when the head quarters were established at Newcastle. In June, 1832, the troops were transferred to Fort Columbus.

On referring to the history of this post, prior to 1829, it is found that in the third quarter of 1825 nearly every man suffered from diarrhœa and intermittent and remittent fever, (Vide p. 46,) and in 1827, the deleterious effects arising from the introduction of lead into the system was manifested in a large portion of the command. See pp. 56 and 57.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Hancock Barracks -	1,633	17	9	3,116	1,908
West Point - - -	3,734	13	9	16,804	4,500
Fort Snelling - -	1,496	24	11	3,534	2,362
" Winnebago - -	1,534	20	14	2,145	1,398
" Crawford - -	1,793	43	28	5,472	3,052
" Armstrong - -	591	20	8	1,527	2,584
" Leavenworth -	1,823	44	22	6,506	3,569
Aggregate - -	12,604	181	101	39,104	-
Ratio per 1,000 -	-	14*	8	-	3,103

The annual ratio of mortality, according to the medical reports, is $\frac{8}{10}$ per cent., and according to the post returns, $1\frac{4}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (six at Fort Crawford and three at Fort Leavenworth) have been excluded, and in the medical returns, such deaths also as arose from drowning, suicide, and other than natural causes. As the ratio per 1,000 of mean strength annually under treatment is 3,103, it appears that each man, on an average, was reported sick once in nearly every four months. The comparative degree of sickness in this class will be shown in a distinct table.

The tabular views in reference to certain specific diseases having a close relation with season and climate, as well as the relative agency of the seasons in the etiology of morbid action, exhibited in the preceding classes, will be now continued, in further illustration of the diseases of this system of climate.

* This result is based on the aggregate mean strength of the post returns, being 12,790.

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter - -	2	13	3	5	21	6	216	266	12837	21
Second " - - -	2	24	13	22	69	37	235	402	11898	34
Third " - - -	3	36	33	28	262	40	313	715	12465	57
Fourth " - - -	3	38	16	21	125	18	302	523	13219	40
Annual ratio -	10	111	65	76	477	101	1066	1906	12604	151
REMITTENT FEVER.										
First quarter - -	5	3	–	6	–	4	3	21	12837	2
Second " - - -	3	6	4	–	3	16	4	36	11898	3
Third " - - -	6	3	24	5	61	41	24	164	12465	13
Fourth " - - -	1	15	5	10	13	10	22	76	13219	6
Annual ratio -	15	27	33	21	77	71	53	297	12604	24
SYNOCHAL FEVER.										
First quarter - -	7	124	5	3	–	3	–	142	12837	11
Second " - - -	16	122	8	4	1	2	1	154	11898	13
Third " - - -	10	162	3	14	1	4	–	194	12465	16
Fourth " - - -	2	74	2	1	–	2	–	81	13219	6
Annual ratio -	35	482	18	22	2	11	1	571	12604	45
TYPHUS FEVER.										
First quarter - -	–	–	–	–	–	–	4	4	12837	3-10
Second " - - -	–	–	–	1	–	–	-	1	11898	1-10
Third " - - -	–	3	–	–	–	–	2	5	12465	4-10
Fourth " - - -	–	–	–	–	1	–	-	1	13219	8-100
Annual ratio -	–	3	–	1	1	–	6	11	12604	9-10
DIARRHŒA AND DYSENTERY.										
First quarter - -	47	171	29	24	51	9	84	415	12837	32
Second " - - -	45	151	69	40	175	61	103	644	11898	54
Third " - - -	100	497	173	86	588	103	491	2037	12465	163
Fourth " - - -	72	204	50	43	119	36	225	749	13219	56
Annual ratio -	264	1023	321	193	933	208	903	3845	12604	305

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Hancock Barracks -	1,633	17	9	3,116	1,908
West Point - - -	3,734	13	9	16,804	4,500
Fort Snelling - -	1,496	24	11	3,534	2,362
" Winnebago - -	1,534	20	14	2,145	1,398
" Crawford - -	1,793	43	28	5,472	3,052
" Armstrong - -	591	20	8	1,527	2,584
" Leavenworth -	1,823	44	22	6,506	3,569
Aggregate - -	12,604	181	101	39,104	-
Ratio per 1,000 -	-	14*	8	-	3,103

The annual ratio of mortality, according to the medical reports, is $\frac{8}{10}$ per cent., and according to the post returns, $1\frac{4}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (six at Fort Crawford and three at Fort Leavenworth) have been excluded, and in the medical returns, such deaths also as arose from drowning, suicide, and other than natural causes. As the ratio per 1,000 of mean strength annually under treatment is 3,103, it appears that each man, on an average, was reported sick once in nearly every four months. The comparative degree of sickness in this class will be shown in a distinct table.

The tabular views in reference to certain specific diseases having a close relation with season and climate, as well as the relative agency of the seasons in the etiology of morbid action, exhibited in the preceding classes, will be now continued, in further illustration of the diseases of this system of climate.

* This result is based on the aggregate mean strength of the post returns, being 12,790.

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter - -	2	13	3	5	21	6	216	266	12837	21
Second " - - -	2	24	13	22	69	37	235	402	11898	34
Third " - - -	3	36	33	28	262	40	313	715	12465	57
Fourth " - - -	3	38	16	21	125	18	302	523	13219	40
Annual ratio -	10	111	65	76	477	101	1066	1906	12604	151
REMITTENT FEVER.										
First quarter - -	5	3	–	6	–	4	3	21	12837	2
Second " - - -	3	6	4	–	3	16	4	36	11898	3
Third " - - -	6	3	24	5	61	41	24	164	12465	13
Fourth " - - -	1	15	5	10	13	10	22	76	13219	6
Annual ratio -	15	27	33	21	77	71	53	297	12604	24
SYNOCHAL FEVER.										
First quarter - -	7	124	5	3	–	3	–	142	12837	11
Second " - - -	16	122	8	4	1	2	1	154	11898	13
Third " - - -	10	162	3	14	1	4	–	194	12465	16
Fourth " - - -	2	74	2	1	–	2	–	81	13219	6
Annual ratio -	35	482	18	22	2	11	1	571	12604	45
TYPHUS FEVER.										
First quarter - -	–	–	–	–	–	–	4	4	12837	3-10
Second " - - -	–	–	–	1	–	–	-	1	11898	1-10
Third " - - -	–	3	–	–	–	–	2	5	12465	4-10
Fourth " - - -	–	–	–	–	1	–	-	1	13219	8-100
Annual ratio -	–	3	–	1	1	–	6	11	12604	9-10
DIARRHŒA AND DYSENTERY.										
First quarter - -	47	171	29	24	51	9	84	415	12837	32
Second " - - -	45	151	69	40	175	61	103	644	11898	54
Third " - - -	100	497	173	86	588	102	491	2037	12465	163
Fourth " - - -	72	204	50	43	119	36	225	749	13219	56
Annual ratio -	264	1023	321	193	933	208	903	3845	12604	305

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter	168	783	210	162	288	96	537	2244	12837	175
Second "	83	559	314	74	255	46	92	1423	11898	120
Third "	62	556	182	80	146	19	33	1077	12465	86
Fourth "	124	1176	214	132	359	48	180	2233	13219	169
Annual ratio	437	3073	920	448	1048	209	842	6977	12604	552
PNEUMONIA.										
First quarter	19	15	3	5	6	3	15	66	12837	5
Second "	6	4	2	4	6	3	13	38	11898	3
Third "	11	20	3	1	2	–	7	44	12465	4
Fourth "	5	37	1	1	14	3	2	63	13219	5
Annual ratio	41	76	9	11	28	9	37	211	12604	17
PLEURITIS.										
First quarter	27	20	16	6	19	6	23	117	12837	9
Second "	35	3	6	16	9	7	14	90	11898	8
Third "	9	–	13	2	17	3	4	48	12465	4
Fourth "	12	11	17	5	30	7	16	98	13219	7
Annual ratio	83	34	52	29	75	23	57	353	12604	28
PHTHISIS PULMONALIS.										
First quarter	3	6	4	1	3	–	11	28	12837	2
Second "	1	–	–	2	2	1	4	10	11898	1
Third "	–	1	–	6	5	1	–	13	12465	1
Fourth "	5	–	–	1	3	1	4	14	13219	1
Annual ratio	9	7	4	10	13	3	19	65	12604	5
RHEUMATISM.										
First quarter	47	177	108	33	42	33	134	574	12837	45
Second "	86	187	127	35	62	33	76	606	11898	48
Third "	56	198	73	15	58	24	37	461	12465	37
Fourth "	59	126	84	26	47	23	88	453	13219	34
Annual ratio	248	688	392	109	209	113	335	2094	12604	166

In regard to pulmonary diseases, the most striking fact, in this class of posts, is the high ratio of catarrhal affections, compared with the two preceding ones. The results also show prominently the comparative influence of the seasons in their causation, the ratios of the first and fourth quarters being respectively 175 and 169, and of the second and third, 120 and 86. As respects the remaining pulmonic diseases, the results are not very dissimilar from those exhibited in the foregoing classes. The various relations of our different systems of climate, in reference to these diseases, will be more fully elucidated, when the investigation of each class of posts shall have been completed. Suffice it to say that on the coast of New England, as the ocean modifies the atmospheric temperature, the annual ratio of *catarrhal* cases per 1,000 of strength is 233; on the great lakes, where a similar modifying agency is in operation, it is 300; whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552.

In the following table the annual results, in reference to this class of diseases, as well as the mortality from each, are exhibited. The total of deaths given are those only which occurred among men on the sick-list—a ratio considerably lower than that of the post returns, which include the deaths from all causes.

TABLE exhibiting the annual results and mortality of diseases.

Northern division.	Mean strength.	Ratio of cases per 1,000 of mean strength.					Deaths.						
		Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.	Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Hæmoptysis.	Total per medical returns.	Causes not specified.
Posts on the lakes - -	5973	300	19	30	9	358	1	4	–	9	–	65	12
Atlantic posts - - -	3130	233	22	26	9	290	–	1	–	15	–	140	16
Posts remote from the ocean and the lakes - - -	12604	552	17	28	5	602	–	3	1	22	1	119	16
Total - - -	21707	439	18	28	7	490	1	8	1	46	1	324	44

The following abstract exhibits, at a single glance, the relative mortality, extent of sickness, and comparative prevalence of certain diseases, in the three classes of posts adopted in reference to the northern division of the United States—

TABLE exhibiting the relative mortality, extent of sickness, and comparative prevalence of certain diseases.

Systems of climate.	Deaths per centum per medical returns.	Deaths per centum per Adjutant General's returns.	Ratio per 1,000 of mean strength under treatment annually.	Ratio of cases per 1,000 of mean strength.									
				Intermittent fever.	Remittent fever.	Synochal fever.	Typhus fever.	Diarrhœa and dysentery.	Respiratory organs.				
									Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.
North'n lakes	9-10	1 3-10	2185	193	33	16	4	253	300	19	30	9	358
Atlantic coast	1 5-10	2	1912	36	26	43	5	170	233	22	26	9	290
Stations remote from ocean and inland seas.	8-10	1 4-10	3103	151	24	45	5 9-10	300	552	17	28	5	602
†Average -	9-10	1 5-10	2660	143	26	37	2 4-10	269	439	18	28	7	490
†Average -	1 1-10	1 6-10	2400	217	28	35	3 3-10	243	362	19	28	8	412

In regard to the ratio of mortality, it is seen that there is little difference between the first and third class of posts. On the Atlantic coast, it is about 50 per cent. higher than the mean of the other two classes—a result to be ascribed mainly to the circumstance that the troops have more easy access to spirituous liquors. Moreover, in the last class, more than one-fourth of the aggregate mean strength consists of the cadets at the military academy, among whom the usual effects of alcoholic potations among soldiers are not exhibited.

As regards the relative degree of salubrity, as shown by the ratio of cases reported in each class, it appears that the third is about 50 per cent. higher than the mean of the other two; but in estimating the value of this result, it is necessary to bear in mind the high average of West Point and Fort Leavenworth, as detailed under each post respectively.

In reference to intermittent fever, a striking difference is found to obtain. On the lakes this disease is very rife, whilst on the New England coast it is almost unknown, the cases reported being generally of foreign origin. The ratio of the third class is also high, owing more especially to the locality of the Forts Crawford and Leavenworth, the latter being near the 39th degree of latitude. At Hancock Barracks, West Point, and Forts Snelling and Winnebago, the occurrence of the disease is unu-

* In the ratio of diseases of the respiratory organs, Fort Independence is excluded.

† Of these two averages, the former expresses the result of a comparison between the aggregate strength of the three divisions, and the aggregate of cases and deaths, whilst the latter shows the mean of the results obtained in each class. The first exhibits the actual ratios given by the statistics of the posts, whereas the second supposes an equal number of troops in each division.

sual. As respects remittent fever, there is no great contrast presented in the averages of the three classes—a result somewhat inconsistent with the doctrine of its common origin with intermittent fever, when it is considered that the New England coast enjoys an exemption from the latter. In regard to synochal fever, it is found that the ratio of the first class is much the lowest; and in the third, a great majority is furnished by West Point, many of these being reported under the name of *ephemeral*. Of typhus fever, the average is far the lowest in the third class. Diarrhœa and dysentery show considerable diversity in their ratios, being much the lowest on the sea-coast, thus implying a connexion with diseases of malarial origin.

Pulmonary diseases in general are no less under the influence of season and climate than intermittent fever. In tracing out the comparative prevalence of the more prominent modifications of this class of diseases, so far as relates to their annual results, it is found that, as a class, the ratio of the third is nearly twice as high as the mean of the other two systems of climate; but this result arises wholly from the greater prevalence of catarrh and influenza. The averages of pneumonia and pleuritis exhibit little variation. The ratio of phthisis pulmonalis, however, contrary to the general result, is much lower in the third than in either of the other two classes; but this difference is more apparent than real, from the circumstance that nearly all the fatal cases of consumption are ascribed to the abuse of ardent spirits. In the third class, for example, if the results of West Point are excluded from the calculation, the ratio of cases per 1,000 rises nearly to 7; and the difference still existing is doubtless owing to the greater facility of obtaining, at the posts along the seaboard, inebriating potations.

The following table shows the number of deaths in each month, according to the post returns, in the three classes described—

TABLE showing the number of deaths in each month.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
22	27	26	26	32	28	55	41	39	25	37	40

The ratio of November and December may be regarded as the highest, for in the total of July are included thirty deaths from epidemic cholera, in August six, and in September six, from the same cause.

MIDDLE REGION OF THE UNITED STATES.

This division comprises two general systems of climate, which bear the same meteorological relation to each other as the modified climate of the great lakes and the coast of New England does to that of the class last described. Whilst in the northern division a steady temperature predominates, this one, notwithstanding the extremes of temperature are

Under the class of diseases of the respiratory organs are comprised 842 catarrh, 37 pneumonia, 57 pleuritis, and 19 phthisis pulmonalis; under the head of diseases of the digestive organs, 903 diarrhœa and dysentery, 49 cholic and cholera, and 19 hepatitis; under the class of brain and nervous system, 16 epilepsy, 1 apoplexy, and 8 delirium tremens; and under that of venereal affections, 172 gonorrhœa, and 30 syphilis.

The total of deaths, according to the post returns, is 47, the annual ratio of mortality being $2\frac{4}{10}$ per cent. Of these, 28 are reported in the medical returns, viz. 3 typhus fever, 2 remittent fever, 4 phthisis pulmonalis, 2 pneumonia, 3 cholera epidemica, 3 atrophia, 1 chronic diarrhœa, 1 dysentery, 1 phrenitis, 1 apoplexy, 1 epilepsy, 1 drowned, 1 gun-shot wound, 1 suicide, 1 assassination, and 2 accidental, making, excluding the six last, an annual mortality of $1\frac{4}{10}$ per cent. In the post returns, 19 deaths are reported in 1834, of which no report is made by the medical officer. These fatal cases occurred among the dragoons, who had just returned from an expedition among the Pawnees. In the command of the post proper, there was no death during the year. The result of this year and the subsequent ones cannot be regarded as a fair test of the healthfulness of the locality of Fort Leavenworth, as the dragoons generally made summer campaigns into the country of the Osages, Pottawatamies, &c. In 1833, there occurred 9 cases of epidemic cholera among the mounted rangers at this post, 3 of which proved fatal. This disease, although much diminished in fatality compared with the wide-spread epidemic of the previous year, prevailed very generally along our western frontier. In the first quarter of 1837, "the measles," says Surgeon Macomb, "prevailed among the troops; after which an epidemic catarrh made its appearance, similar to the influenza, and sometimes accompanied with symptoms of the peripneumonia notha of Sydenham." The unusual prevalence of diarrhœa (251 cases) in the third quarter of this year, is ascribed to the moisture and extreme heat of the summer months acting upon unacclimated constitutions, most of the troops being recruits from the east and the north. The post was regarded by the medical officer as "decidedly salubrious."

In a topographical description of this post, it is remarked by Surgeon Macomb, that "the Missouri river is at its highest rise in the month of June, in consequence, as it is supposed, of the melting of the snow in the Rocky Mountains. It continues thus full and overflowing the low grounds until the last of July. On the subsidence of the waters, many low spots in the bottoms are left filled with stagnant water, which the sun rapidly decomposes. Hence we may say that about the 1st of August the season of sickness commences. The diseases are, early in the season, chiefly intermittent fever and dysentery. Subsequently, they assume the remittent type; these are complicated with local congestions, and ultimately become typhoid.

"The treatment is generally indicated by the more urgent symptoms of the disease. Intermittent fever is treated in two stages—1st, during the paroxysm, and 2d, during the apyrexial stage. Emetics, composed

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Delaware, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	65	119	99	116	-	-	-	-	-	-	399	102	106	94	70*	-	-	-	-	-	-	372
Intermittent fever - -	-	6	-	1	-	-	-	-	-	-	7	4	4	12	3	-	-	-	-	-	-	23
Remittent fever - -	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	16
Synochal fever - -	4	-	7	-	-	-	-	-	-	-	11	2	-	-	-	-	-	-	-	-	-	2
Typhus fever - -	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	7	2	2	23	-	-	-	-	-	-	34	9	1	4	3	-	-	-	-	-	-	17
Diseases of the digestive organs - -	1	34	4	6	-	-	-	-	-	-	45	8	21	-	1	-	-	-	-	-	-	30
Diseases of the brain and nervous system - -	1	3	1	-	-	-	-	-	-	-	5	3	2	5	-	-	-	-	-	-	-	10
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	1	3	2	-	-	-	-	-	-	7	2	2	1	1	-	-	-	-	-	-	6
Venereal affections -	1	3	1	4	-	-	-	-	-	-	9	9	1	3	-	-	-	-	-	-	-	13
Ulcers and abscesses -	-	1	2	-	-	-	-	-	-	-	3	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries -	1	5	-	4	-	-	-	-	-	-	10	10	-	1	1	-	-	-	-	-	-	12
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases - -	3	12	3	6	-	-	-	-	-	-	24	20	2	1	3	-	-	-	-	-	-	26
Total - - -	20	67	23	46	-	-	-	-	-	-	156	85	33	29	12	-	-	-	-	-	-	159

* Average mean strength for two months.

Under the class of diseases of the respiratory organs are comprised 842 catarrh, 37 pneumonia, 57 pleuritis, and 19 phthisis pulmonalis; under the head of diseases of the digestive organs, 903 diarrhœa and dysentery, 49 cholic and cholera, and 19 hepatitis; under the class of brain and nervous system, 16 epilepsy, 1 apoplexy, and 8 delirium tremens; and under that of venereal affections, 172 gonorrhœa, and 30 syphilis.

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"The treatment is generally indicated by the more urgent symptoms of the disease. Intermittent fever is treated in two stages—1st, during the paroxysm, and 2d, during the apyrexial stage. Emetics, composed

of ipecac 21 grs. and Ant. tart. grs. 3, are exhibited with manifest advantage during the paroxysm, followed up with cathartics of calomel 21 grs. and pulv. jal. grs. 10, sup. tart. pot. et jalap āā 22, senna, manna, and neutral salts. The sulphate of quinine in small doses, during the intermission and after the evacuants, will generally complete the cure.

"Dysentery is usually treated by evacuants, viz. calomel followed by castor oil, blisters on the abdomen, pulv. dov., or cal. opii. et ipecac. combined, in small doses. V. S. is seldom necessary, although cupping is sometimes advantageous.

"When the fevers become congestive, blisters, sudorifics, and counter irritants, are among the best remedies, V. S. and local bleeding in the early stages, and mercureal alteratives in the secondary and latter stages.

"In the typhoid stage, the diffusible and permanent stimulants are usually indicated."

Although this post, considering its relative position, may be justly regarded, at the present day, as decidedly salubrious, yet on reference to the history of its early establishment in 1827 and 1828, it will be seen that the command suffered much from the diseases incident to troops establishing themselves in an uncultivated region.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
9 first quarters -	2,127	1,747	817
8 second " -	1,492	1,242	832
9 third " -	1,546	1,692	1,094
9 fourth " -	2,126	1,825	859
Annual ratio -	1,823	6,506	3,569

Every man has consequently been reported sick, on an average, about once in every three months and a third.

Having concluded the investigation of those stations in the northern region of the United States, remote from the ocean as well as inland seas, and consequently characterized by extremes of temperature and by seasons strongly contrasted, the results obtained from this class will now be stated with the view to general deductions.

The following table exhibits the mortality of each post, and the relative degree of sickness, based on the statistics of ten years—from 1829 to 1839—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Hancock Barracks -	1,633	17	9	3,116	1,908
West Point - - -	3,734	13	9	16,804	4,500
Fort Snelling - -	1,496	24	11	3,534	2,362
" Winnebago - -	1,534	20	14	2,145	1,398
" Crawford - -	1,793	43	28	5,472	3,052
" Armstrong - -	591	20	8	1,527	2,584
" Leavenworth -	1,823	44	23	6,506	3,569
Aggregate - -	12,604	181	101	39,104	-
Ratio per 1,000 -	-	14*	8	-	3,103

The annual ratio of mortality, according to the medical reports, is $\frac{8}{10}$ per cent., and according to the post returns, $1\frac{4}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (six at Fort Crawford and three at Fort Leavenworth) have been excluded, and in the medical returns, such deaths also as arose from drowning, suicide, and other than natural causes. As the ratio per 1,000 of mean strength annually under treatment is 3,103, it appears that each man, on an average, was reported sick once in nearly every four months. The comparative degree of sickness in this class will be shown in a distinct table.

The tabular views in reference to certain specific diseases having a close relation with season and climate, as well as the relative agency of the seasons in the etiology of morbid action, exhibited in the preceding classes, will be now continued, in further illustration of the diseases of this system of climate.

* This result is based on the aggregate mean strength of the post returns, being 12,790.

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter - -	2	13	3	5	21	6	216	266	12837	21
Second " - - -	2	24	13	22	69	37	235	402	11898	34
Third " - - -	3	36	33	28	262	40	313	715	12465	57
Fourth " - - -	3	38	16	21	125	18	302	523	13219	40
Annual ratio -	10	111	65	76	477	101	1066	1906	12604	151
REMITTENT FEVER.										
First quarter - -	5	3	–	6	–	4	3	21	12837	2
Second " - - -	3	6	4	–	3	16	4	36	11898	3
Third " - - -	6	3	24	5	61	41	24	164	12465	13
Fourth " - - -	1	15	5	10	13	10	22	76	13219	6
Annual ratio -	15	27	33	21	77	71	53	297	12604	24
SYNOCHAL FEVER.										
First quarter - -	7	124	5	3	–	3	–	142	12837	11
Second " - - -	16	122	8	4	1	2	1	154	11898	13
Third " - - -	10	162	3	14	1	4	–	194	12465	16
Fourth " - - -	2	74	2	1	–	2	–	81	13219	6
Annual ratio -	35	482	18	22	2	11	1	571	12604	45
TYPHUS FEVER.										
First quarter - -	–	–	–	–	–	–	4	4	12837	3-10
Second " - - -	–	–	–	1	–	–	-	1	11898	1-10
Third " - - -	–	3	–	–	–	–	2	5	12465	4-10
Fourth " - - -	–	-	–	–	1	–	-	1	13219	8-100
Annual ratio -	–	3	–	1	1	–	6	11	12604	9-10
DIARRHŒA AND DYSENTERY.										
First quarter - -	47	171	29	24	51	9	84	415	12837	32
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Third " - - -	–	1	–	6	5	1	–	13	12465	1
Fourth " - - -	5	–	–	1	3	1	4	14	13219	1
Annual ratio -	9	7	4	10	13	3	19	65	12604	5
RHEUMATISM.										
First quarter - -	47	177	108	33	42	33	134	574	12837	45
Second " - - -	86	187	127	35	62	33	76	606	11898	48
Third " - - -	56	198	73	15	58	24	37	461	12465	37
Fourth " - - -	59	126	84	26	47	23	88	453	13219	34
Annual ratio -	248	688	392	109	209	113	335	2094	12604	166

In regard to pulmonary diseases, the most striking fact, in this class of posts, is the high ratio of catarrhal affections, compared with the two preceding ones. The results also show prominently the comparative influence of the seasons in their causation, the ratios of the first and fourth quarters being respectively 175 and 169, and of the second and third, 120 and 86. As respects the remaining pulmonic diseases, the results are not very dissimilar from those exhibited in the foregoing classes. The various relations of our different systems of climate, in reference to these diseases, will be more fully elucidated, when the investigation of each class of posts shall have been completed. Suffice it to say that on the coast of New England, as the ocean modifies the atmospheric temperature, the annual ratio of *catarrhal* cases per 1,000 of strength is 233; on the great lakes, where a similar modifying agency is in operation, it is 300; whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552.

In the following table the annual results, in reference to this class of diseases, as well as the mortality from each, are exhibited. The total of deaths given are those only which occurred among men on the sick-list—a ratio considerably lower than that of the post returns, which include the deaths from all causes.

TABLE exhibiting the annual results and mortality of diseases.

Northern division.	Mean strength.	Ratio of cases per 1,000 of mean strength.					Deaths.						
		Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.	Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Hæmoptysis.	Total per medical returns.	Causes not specified.
Posts on the lakes - -	5973	300	19	30	9	358	1	4	–	9	–	65	12
Atlantic posts - - -	3130	233	22	26	9	290	–	1	–	15	–	140	16
Posts remote from the ocean and the lakes - - -	12604	552	17	28	5	602	–	3	1	22	1	119	16
Total - - -	21707	439	18	28	7	490	1	8	1	46	1	324	44

The following abstract exhibits, at a single glance, the relative mortality, extent of sickness, and comparative prevalence of certain diseases, in the three classes of posts adopted in reference to the northern division of the United States—

TABLE exhibiting the relative mortality, extent of sickness, and comparative prevalence of certain diseases.

Systems of climate.	Deaths per centum per medical returns.	Deaths per centum per Adjutant General's returns.	Ratio per 1,000 of mean strength under treatment annually.	Ratio of cases per 1,000 of mean strength.								
				Intermittent fever.	Remittent fever.	Synochal fever.	Typhus fever.	Diarrhœa and dysentery.	Respiratory organs.			
									Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.
North'n lakes	9-10	1 3-10	2185	193	33	16	4	253	300	19	30	9	358
Atlantic coast	1 5-10	2	1912	36	26	43	5	170	233	22	26	9	290
Stations remote from ocean and inland seas.	8-10	1 4-10	3103	151	24	45	5 9-10	300	552	17	28	5	602
†Average -	9-10	1 5-10	2660	143	26	37	2 4-10	269	439	18	28	7	490
†Average -	1 1-10	1 6-10	2400	217	28	35	3 3-10	243	362	19	28	8	413

In regard to the ratio of mortality, it is seen that there is little difference between the first and third class of posts. On the Atlantic coast, it is about 50 per cent. higher than the mean of the other two classes—a result to be ascribed mainly to the circumstance that the troops have more easy access to spirituous liquors. Moreover, in the last class, more than one-fourth of the aggregate mean strength consists of the cadets at the military academy, among whom the usual effects of alcoholic potations among soldiers are not exhibited.

As regards the relative degree of salubrity, as shown by the ratio of cases reported in each class, it appears that the third is about 50 per cent. higher than the mean of the other two; but in estimating the value of this result, it is necessary to bear in mind the high average of West Point and Fort Leavenworth, as detailed under each post respectively.

In reference to intermittent fever, a striking difference is found to obtain. On the lakes this disease is very rife, whilst on the New England coast it is almost unknown, the cases reported being generally of foreign origin. The ratio of the third class is also high, owing more especially to the locality of the Forts Crawford and Leavenworth, the latter being near the 39th degree of latitude. At Hancock Barracks, West Point, and Forts Snelling and Winnebago, the occurrence of the disease is unu-

* In the ratio of diseases of the respiratory organs, Fort Independence is excluded.

† Of these two averages, the former expresses the result of a comparison between the aggregate strength of the three divisions, and the aggregate of cases and deaths, whilst the latter shows the mean of the results obtained in each class. The first exhibits the actual ratios given by the statistics of the posts, whereas the second supposes an equal number of troops in each division.

nual. As respects remittent fever, there is no great contrast presented in the averages of the three classes—a result somewhat inconsistent with the doctrine of its common origin with intermittent fever, when it is considered that the New England coast enjoys an exemption from the latter. In regard to synochal fever, it is found that the ratio of the first class is much the lowest; and in the third, a great majority is furnished by West Point, many of these being reported under the name of *ephemeral*. Of typhus fever, the average is far the lowest in the third class. Diarrhœa and dysentery show considerable diversity in their ratios, being much the lowest on the sea-coast, thus implying a connexion with diseases of malarial origin.

Pulmonary diseases in general are no less under the influence of season and climate than intermittent fever. In tracing out the comparative prevalence of the more prominent modifications of this class of diseases, so far as relates to their annual results, it is found that, as a class, the ratio of the third is nearly twice as high as the mean of the other two systems of climate; but this result arises wholly from the greater prevalence of catarrh and influenza. The averages of pneumonia and pleuritis exhibit little variation. The ratio of phthisis pulmonalis, however, contrary to the general result, is much lower in the third than in either of the other two classes; but this difference is more apparent than real, from the circumstance that nearly all the fatal cases of consumption are ascribed to the abuse of ardent spirits. In the third class, for example, if the results of West Point are excluded from the calculation, the ratio of cases per 1,000 rises nearly to 7; and the difference still existing is doubtless owing to the greater facility of obtaining, at the posts along the seaboard, inebriating potations.

The following table shows the number of deaths in each month, according to the post returns, in the three classes described—

TABLE showing the number of deaths in each month.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
22	27	26	26	32	28	55	41	39	25	37	40

The ratio of November and December may be regarded as the highest, for in the total of July are included thirty deaths from epidemic cholera, in August six, and in September six, from the same cause.

MIDDLE REGION OF THE UNITED STATES.

This division comprises two general systems of climate, which bear the same meteorological relation to each other as the modified climate of the great lakes and the coast of New England does to that of the class last described. Whilst in the northern division a steady temperature predominates, this one, notwithstanding the extremes of temperature are

much more modified, is characterized by variableness. On reference to abstracts A, B, C, of the "Remarks" to the meteorological register, the difference in the climate of the two regions of the middle division, so far as temperature is concerned, may be seen. Thus, Jefferson Barracks shows a greater contrast in the seasons than Washington City; and on comparing Fort Gibson with Fort Monroe, which is 1° 32′ north of the former, a similar result is exhibited.

Of the two classes of posts pertaining to this division, the *first* embraces the stations on the sea-coast and inlets of the ocean between the Delaware and Savannah rivers, viz: Forts Delaware, McHenry, Severn, Washington, and Monroe, Bellona Arsenal, Forts Moultrie, and Johnston, and Oglethrope Barracks; and the *second* comprises the interior posts, viz: Jefferson Barracks, Forts Gibson, Smith, and Coffee, Towson, and Jesup.

I. THE ATLANTIC COAST.

FORT DELAWARE.

LATITUDE 39° 35′, LONGITUDE 75° 29′.

Fort Delaware is situated on a mud island, formed by the deposition of alluvion in the Delaware. The soil is of such a spongy nature that any heavy body will gradually sink for several days. It is four miles from Newcastle, and about forty miles below Philadelphia.

The diseases reported within the ten years are condensed in the subjoined abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Delaware, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength	65	119	99	116	-	-	-	-	-	-	399	102	106	94	70*	-	-	-	-	-	-	372
Intermittent fever	-	6	-	1	-	-	-	-	-	-	7	4	4	12	3	-	-	-	-	-	-	23
Remittent fever	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	16
Synochal fever	4	-	7	-	-	-	-	-	-	-	11	2	-	-	-	-	-	-	-	-	-	2
Typhus fever	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs	7	2	2	23	-	-	-	-	-	-	34	9	1	4	3	-	-	-	-	-	-	17
Diseases of the digestive organs	1	34	4	6	-	-	-	-	-	-	45	8	21	-	1	-	-	-	-	-	-	30
Diseases of the brain and nervous system	1	3	1	-	-	-	-	-	-	-	5	3	2	5	-	-	-	-	-	-	-	10
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	1	1	3	2	-	-	-	-	-	-	7	2	2	1	1	-	-	-	-	-	-	6
Venereal affections	1	3	1	4	-	-	-	-	-	-	9	9	1	3	-	-	-	-	-	-	-	13
Ulcers and abscesses	-	1	2	-	-	-	-	-	-	-	3	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries	1	5	-	4	-	-	-	-	-	-	10	10	-	1	1	-	-	-	-	-	-	12
Ebriety	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases	3	12	3	6	-	-	-	-	-	-	24	20	2	1	3	-	-	-	-	-	-	26
Total	20	67	23	46	-	-	-	-	-	-	156	85	33	29	12	-	-	-	-	-	-	159

* Average mean strength for two months.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Leavenworth, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	280	-	224	204	262	96	208	304	249	300	2127	-	-	215	159	138	85	87	232	303	273	1492
Intermittent fever -	79	-	3	4	9	10	43	38	19	11	216	-	-	15	11	25	15	31	35	85	18	235
Remittent " - -	2	-	1	-	-	-	-	-	-	3		-	-	-	-	-	-	2	-	1	1	4
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Typhus " - -	2	-	-	1	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	
Diseases of the respiratory organs - -	57	-	101	82	123	5	14	81	71	45	579	-	-	34	7	6	2	10	14	33	15	121
Diseases of the digestive organs - - -	23	-	10	7	7	1	27	22	27	28	152	-	-	20	21	20	3	16	31	37	31	179
Diseases of the brain and nervous system -	1	-	3	4	-	-	3	-	-	7	18	-	-	3	3	7	-	1	-	2	3	19
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	-	4
Rheumatic affections -	20	-	26	15	26	3	13	20	5	6	134	-	-	4	19	4	5	5	9	20	10	76
Venereal " - -	-	-	1	-	1	1	2	22	8	14	49	-	-	1	1	1	-	2	16	16	16	53
Ulcers and abscesses -	8	-	5	4	5	2	5	11	8	35	83	-	-	1	9	2	1	4	10	28	18	73
Wounds and injuries -	30	-	14	24	20	11	20	37	26	24	206	-	-	32	26	9	5	24	36	32	23	187
Ebriety - - -	-	-	1	9	6	1	2	-	-	21	40	-	-	10	11	4	-	1	-	2	6	34
All other diseases -	41	Report defective.	15	16	4	4	4	28	67	84	263	Report defective.	Report defective.	10	6	7	2	3	33	99	96	256
Total - - -	263	-	180	166	201	38	133	259	231	276	1747	-	-	133	115	85	33	99	184	356	237	1242

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	31*	187	214	91	140	131	-	169	363	220	1546	-	198	210	163	124	219	307	205	342	358	2126
Intermittent fever - -	9	7	36	14	69	56	-	29	39	54	313	-	1	6	18	32	69	43	11	51	76	302
Remittent fever - -	1	-	-	-	-	8	-	-	8	7	24	-	1	-	-	-	4	6	1	9	1	22
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	1	6	1	-	1	-	2	22	2	37	-	13	14	17	14	15	26	25	24	57	205
Diseases of the digestive organs - - -	11	5	40	4	115	8	-	31	263	55	532	-	-	39	19	-	14	47	13	69	100	301
Diseases of the brain and nervous system - -	1	1	3	3	1	-	-	-	6	4	19	-	4	-	5	1	1	-	1	1	8	21
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	3	1	-	-	-	-	-	3	-	7
Rheumatic affections -	-	2	7	-	3	2	-	3	20	-	37	-	6	9	19	4	7	6	6	7	24	88
Venereal affections -	-	-	2	-	1	-	-	10	15	15	43	-	-	1	-	2	2	22	8	8	13	56
Ulcers and abscesses -	2	-	4	6	5	1	No report.	11	60	29	118	No report.	1	3	5	2	9	6	10	24	34	94
Wounds and injuries -	2	8	35	7	16	9		12	43	30	162		9	24	9	10	17	40	23	47	48	227
Ebriety - - -	-	1	29	4	1	3		-	1	7	46		2	3	7	2	1	-	-	45	3	63
All other diseases - -	2	12	19	10	12	5		31	148	119	358		2	14	11	18	9	78	21	151	135	439
Total - - -	31	37	181	49	228	93	-	129	627	322	1692	-	42	114	105	85	148	274	119	439	499	1825

* The actual strength is 41, but as the sick-report embraces only two months, 31 becomes the equivalent strength.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Leavenworth, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	280	-	224	204	262	96	208	304	249	300	2127	-	-	215	159	138	85	87	232	303	273	1492
Intermittent fever -	79	-	3	4	9	10	43	38	19	11	216	-	-	15	11	25	15	31	35	85	18	235
Remittent " - -	2	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	2	-	1	1	4
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Typhus " - -	2	-	-	1	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	
Diseases of the respiratory organs - -	57	-	101	82	123	5	14	81	71	45	579	-	-	34	7	6	2	10	14	33	15	121
Diseases of the digestive organs - - -	23	-	10	7	7	1	27	22	27	28	152	-	-	20	21	20	3	16	31	37	31	179
Diseases of the brain and nervous system -	1	-	3	4	-	-	3	-	-	7	18	-	-	3	3	7	-	1	-	2	3	19
Dropsies - - - -	-		-	-	-	-	-	-	-	-	-			3	-	-	-	-	-	1	-	4
Rheumatic affections -	20		26	15	26	3	13	20	5	6	134			4	19	4	5	5	9	20	10	76
Venereal " - -	-		1	-	1	1	2	22	8	14	49			1	1	1	-	2	16	16	16	52
Ulcers and abscesses -	8		5	4	5	2	5	11	8	35	83			1	9	2	1	4	10	28	18	73
Wounds and injuries -	30		14	24	20	11	20	37	26	24	206			32	26	9	5	24	36	32	23	187
Ebriety - - -	-		1	9	6	1	2	-	-	21	40			10	11	4	-	1	-	2	6	34
All other diseases -	41		15	16	4	4	4	28	67	84	263			10	6	7	2	3	33	99	96	256
Total - - -	263	-	180	166	201	38	133	259	231	276	1747	-	-	133	115	85	33	99	184	356	237	1242

Report defective.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	31*	187	214	91	140	131	-	169	363	220	1546	-	198	210	163	124	219	307	205	342	358	2126
Intermittent fever - -	9	7	36	14	69	56	-	29	39	54	313	-	1	6	13	32	69	43	11	51	76	302
Remittent fever - -	1	-	-	-	-	8	-	-	8	7	24	-	1	-	-	-	4	6	1	9	1	22
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	1	6	1	-	1	-	2	22	2	37	-	13	14	17	14	15	26	25	24	57	205
Diseases of the digestive organs - - -	11	5	40	4	115	8	-	31	263	55	532	-	-	39	19	-	14	47	13	69	100	301
Diseases of the brain and nervous system - -	1	1	3	3	1	-	-	-	6	4	19	-	4	-	5	1	1	-	1	1	8	21
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	3	1	-	-	-	-	-	3	-	7
Rheumatic affections -	-	2	7	-	3	2	-	3	20	-	37	-	6	9	19	4	7	6	6	7	24	88
Venereal affections -	-	-	2	-	1	-	-	10	15	15	43	-	-	1	-	2	2	22	8	8	13	56
Ulcers and abscesses -	2	-	4	6	5	1	No report.	11	60	29	118	No report.	1	3	5	2	9	6	10	24	34	94
Wounds and injuries -	2	8	35	7	16	9		12	43	30	162		9	24	9	10	17	40	23	47	48	227
Ebriety - - -	-	1	29	4	1	3		-	1	7	46		2	3	7	2	1	-	-	45	3	63
All other diseases - -	2	12	19	10	12	5		31	148	119	358		2	14	11	18	9	78	21	151	135	439
Total - - -	31	37	181	49	223	93	-	129	627	322	1692	-	42	114	105	85	148	274	119	439	499	1825

* The actual strength is 41, but as the sick-report embraces only two months, 31 becomes the equivalent strength.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Leavenworth, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	280	-	224	204	262	96	208	304	249	300	2127	-	-	215	159	138	85	87	232	303	273	1492
Intermittent fever -	79	-	3	4	9	10	43	38	19	11	216	-	-	15	11	25	15	31	35	85	18	235
Remittent " - -	2	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	2	-	1	1	4
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Typhus " - -	2	-	-	1	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	
Diseases of the respiratory organs - -	57	-	101	82	123	5	14	81	71	45	579	-	-	34	7	6	2	10	14	33	15	121
Diseases of the digestive organs - - -	23	-	10	7	7	1	27	22	27	28	152	-	-	20	21	20	3	16	31	37	31	179
Diseases of the brain and nervous system -	1	-	3	4	-	-	3	-	-	7	18	-	-	3	3	7	-	1	-	2	3	19
Dropsies - - -	-	Report defective.	-	-	-	-	-	-	-	-	-	Report defective.	Report defective.	3	-	-	-	-	-	1	-	4
Rheumatic affections -	20		26	15	26	3	13	20	5	6	134			4	19	4	5	5	9	20	10	76
Venereal " - -	-		1	-	1	1	2	22	8	14	49			1	1	1	-	2	16	16	16	58
Ulcers and abscesses -	8		5	4	5	2	5	11	8	35	83			1	9	2	1	4	10	28	18	73
Wounds and injuries -	30		14	24	20	11	20	37	26	24	206			32	26	9	5	24	36	32	23	187
Ebriety - - -	-		1	9	6	1	2	-	-	21	40			10	11	4	-	1	-	2	6	34
All other diseases -	41		15	16	4	4	4	28	67	84	263			10	6	7	2	3	33	99	96	256
Total - - -	263	-	180	166	201	38	133	259	231	276	1747	-	-	133	115	85	33	99	184	356	237	1242

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	31*	187	214	91	140	131	-	169	363	220	1546	-	198	210	163	124	219	307	205	342	358	2126
Intermittent fever - -	9	7	36	14	69	56	-	29	39	54	313	-	1	6	13	32	69	43	11	51	76	302
Remittent fever - -	1	-	-	-	-	8	-	-	8	7	24	-	1	-	-	-	4	6	1	9	1	22
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	2	1	6	1	-	1	-	2	22	2	37	-	13	14	17	14	15	26	25	24	57	205
Diseases of the digestive organs - - -	11	5	40	4	115	8	-	31	263	55	532	-	-	39	19	-	14	47	13	69	100	301
Diseases of the brain and nervous system - -	1	1	3	3	1	-	-	-	6	4	19	-	4	-	5	1	1	-	1	1	8	21
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	3	1	-	-	-	-	-	3	-	7
Rheumatic affections -	-	2	7	-	3	2	-	3	20	-	37	-	6	9	19	4	7	6	6	7	24	88
Venereal affections -	-	-	2	-	1	-	-	10	15	15	43	-	-	1	-	2	2	22	8	8	13	56
Ulcers and abscesses -	2	-	4	6	5	1	No report.	11	60	29	118	No report.	1	3	5	2	9	6	10	24	34	94
Wounds and injuries -	2	8	35	7	16	9		12	43	30	162		9	24	9	10	17	40	23	47	48	227
Ebriety - - -	-	1	29	4	1	3		-	1	7	46		2	3	7	2	1	-	-	45	3	63
All other diseases - -	2	12	19	10	12	5		31	148	119	358		2	14	11	18	9	78	21	151	135	439
Total - - -	31	37	181	49	223	93	-	129	627	322	1692	-	42	114	105	85	148	274	119	439	499	1825

* The actual strength is 41, but as the sick-report embraces only two months, 31 becomes the equivalent strength.

Under the class of diseases of the respiratory organs are comprised 842 catarrh, 37 pneumonia, 57 pleuritis, and 19 phthisis pulmonalis; under the head of diseases of the digestive organs, 903 diarrhœa and dysentery, 49 cholic and cholera, and 19 hepatitis; under the class of brain and nervous system, 16 epilepsy, 1 apoplexy, and 8 delirium tremens; and under that of venereal affections, 172 gonorrhœa, and 30 syphilis.

The total of deaths, according to the post returns, is 47, the annual ratio of mortality being $2\frac{4}{10}$ per cent. Of these, 28 are reported in the medical returns, viz. 3 typhus fever, 2 remittent fever, 4 phthisis pulmonalis, 2 pneumonia, 3 cholera epidemica, 3 atrophia, 1 chronic diarrhœa, 1 dysentery, 1 phrenitis, 1 apoplexy, 1 epilepsy, 1 drowned, 1 gun-shot wound, 1 suicide, 1 assassination, and 2 accidental, making, excluding the six last, an annual mortality of $1\frac{4}{10}$ per cent. In the post returns, 19 deaths are reported in 1834, of which no report is made by the medical officer. These fatal cases occurred among the dragoons, who had just returned from an expedition among the Pawnees. In the command of the post proper, there was no death during the year. The result of this year and the subsequent ones cannot be regarded as a fair test of the healthfulness of the locality of Fort Leavenworth, as the dragoons generally made summer campaigns into the country of the Osages, Pottawatamies, &c. In 1833, there occurred 9 cases of epidemic cholera among the mounted rangers at this post, 3 of which proved fatal. This disease, although much diminished in fatality compared with the wide-spread epidemic of the previous year, prevailed very generally along our western frontier. In the first quarter of 1837, "the measles," says Surgeon Macomb, "prevailed among the troops; after which an epidemic catarrh made its appearance, similar to the influenza, and sometimes accompanied with symptoms of the peripneumonia notha of Sydenham." The unusual prevalence of diarrhœa (251 cases) in the third quarter of this year, is ascribed to the moisture and extreme heat of the summer months acting upon unacclimated constitutions, most of the troops being recruits from the east and the north. The post was regarded by the medical officer as "decidedly salubrious."

In a topographical description of this post, it is remarked by Surgeon Macomb, that "the Missouri river is at its highest rise in the month of June, in consequence, as it is supposed, of the melting of the snow in the Rocky Mountains. It continues thus full and overflowing the low grounds until the last of July. On the subsidence of the waters, many low spots in the bottoms are left filled with stagnant water, which the sun rapidly decomposes. Hence we may say that about the 1st of August the season of sickness commences. The diseases are, early in the season, chiefly intermittent fever and dysentery. Subsequently, they assume the remittent type; these are complicated with local congestions, and ultimately become typhoid.

"The treatment is generally indicated by the more urgent symptoms of the disease. Intermittent fever is treated in two stages—1st, during the paroxysm, and 2d, during the apyrexial stage. Emetics, composed

of ipecac 21 grs. and Ant. tart. grs. 3, are exhibited with manifest advantage during the paroxysm, followed up with cathartics of calomel 21 grs. and pulv. jal. grs. 10, sup. tart. pot. et jalap āā 22, senna, manna, and neutral salts. The sulphate of quinine in small doses, during the intermission and after the evacuants, will generally complete the cure.

"Dysentery is usually treated by evacuants, viz. calomel followed by castor oil, blisters on the abdomen, pulv. dov., or cal. opii. et ipecac. combined, in small doses. V. S. is seldom necessary, although cupping is sometimes advantageous.

"When the fevers become congestive, blisters, sudorifics, and counter irritants, are among the best remedies, V. S. and local bleeding in the early stages, and mercureal alteratives in the secondary and latter stages.

"In the typhoid stage, the diffusible and permanent stimulants are usually indicated."

Although this post, considering its relative position, may be justly regarded, at the present day, as decidedly salubrious, yet on reference to the history of its early establishment in 1827 and 1828, it will be seen that the command suffered much from the diseases incident to troops establishing themselves in an uncultivated region.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
9 first quarters -	2,127	1,747	817
8 second " -	1,492	1,242	832
9 third " -	1,546	1,692	1,094
9 fourth " -	2,126	1,825	859
Annual ratio -	1,823	6,506	3,569

Every man has consequently been reported sick, on an average, about once in every three months and a third.

Having concluded the investigation of those stations in the northern region of the United States, remote from the ocean as well as inland seas, and consequently characterized by extremes of temperature and by seasons strongly contrasted, the results obtained from this class will now be stated with the view to general deductions.

The following table exhibits the mortality of each post, and the relative degree of sickness, based on the statistics of ten years—from 1829 to 1839—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Hancock Barracks -	1,633	17	9	3,116	1,908
West Point - - -	3,734	13	9	16,804	4,500
Fort Snelling - -	1,496	24	11	3,534	2,362
" Winnebago - -	1,534	20	14	2,145	1,398
" Crawford - -	1,793	43	28	5,472	3,052
" Armstrong - -	591	20	8	1,527	2,584
" Leavenworth -	1,823	44	22	6,506	3,569
Aggregate - -	12,604	181	101	39,104	-
Ratio per 1,000 -	-	14*	8	-	3,103

The annual ratio of mortality, according to the medical reports, is $\frac{8}{10}$ per cent., and according to the post returns, $1\frac{4}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (six at Fort Crawford and three at Fort Leavenworth) have been excluded, and in the medical returns, such deaths also as arose from drowning, suicide, and other than natural causes. As the ratio per 1,000 of mean strength annually under treatment is 3,103, it appears that each man, on an average, was reported sick once in nearly every four months. The comparative degree of sickness in this class will be shown in a distinct table.

The tabular views in reference to certain specific diseases having a close relation with season and climate, as well as the relative agency of the seasons in the etiology of morbid action, exhibited in the preceding classes, will be now continued, in further illustration of the diseases of this system of climate.

* This result is based on the aggregate mean strength of the post returns, being 12,790.

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter - -	2	13	3	5	21	6	216	266	12837	21
Second " - - -	2	24	13	22	69	37	235	402	11898	34
Third " - - -	3	36	33	28	262	40	313	715	12465	57
Fourth " - - -	3	38	16	21	125	18	302	523	13219	40
Annual ratio -	10	111	65	76	477	101	1066	1906	12604	151
REMITTENT FEVER.										
First quarter - -	5	3	–	6	–	4	3	21	12837	2
Second " - - -	3	6	4	–	3	16	4	36	11898	3
Third " - - -	6	3	24	5	61	41	24	164	12465	13
Fourth " - - -	1	15	5	10	13	10	22	76	13219	6
Annual ratio -	15	27	33	21	77	71	53	297	12604	24
SYNOCHAL FEVER.										
First quarter - -	7	124	5	3	–	3	–	142	12837	11
Second " - - -	16	122	8	4	1	2	1	154	11898	13
Third " - - -	10	162	3	14	1	4	–	194	12465	16
Fourth " - - -	2	74	2	1	–	2	–	81	13219	6
Annual ratio -	35	482	18	22	2	11	1	571	12604	45
TYPHUS FEVER.										
First quarter - -	–	–	–	–	–	–	4	4	12837	3-10
Second " - - -	–	–	–	1	–	–	-	1	11898	1-10
Third " - - -	–	3	–	–	–	–	2	5	12465	4-10
Fourth " - - -	–	-	-	–	1	–	-	1	13219	8-100
Annual ratio -	–	3	–	1	1	–	6	11	12604	9-10
DIARRHŒA AND DYSENTERY.										
First quarter - -	47	171	29	24	51	9	84	415	12837	32
Second " - - -	45	151	69	40	175	61	103	644	11898	54
Third " - - -	100	497	173	86	588	102	491	2037	12465	163
Fourth " - - -	72	204	50	43	119	36	225	749	13219	56
Annual ratio -	264	1023	321	193	933	208	903	3845	12604	305

TABLE exhibiting the relative influence of the seasons in the production of morbid action, &c.

DISEASES.	Hancock Barracks.	West Point.	Fort Snelling.	Fort Winnebago.	Fort Crawford.	Fort Armstrong.	Fort Leavenworth.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter - -	168	783	210	162	288	96	537	2244	12837	175
Second " - - -	83	559	314	74	255	46	92	1423	11898	120
Third " - - -	62	555	182	80	146	19	33	1077	12465	86
Fourth " - - -	124	1176	214	132	359	48	180	2233	13219	169
Annual ratio	437	3073	920	448	1048	209	842	6977	12604	552
PNEUMONIA.										
First quarter - -	19	15	3	5	6	3	15	66	12837	5
Second " - -	6	4	2	4	6	3	13	38	11898	3
Third " - - -	11	20	3	1	2	–	7	44	12465	4
Fourth " - - -	5	37	1	1	14	3	2	63	13219	5
Annual ratio -	41	76	9	11	28	9	37	211	12604	17
PLEURITIS.										
First quarter - -	27	20	16	6	19	6	23	117	12837	9
Second " - - -	35	3	6	16	9	7	14	90	11898	8
Third " - - -	9	–	13	2	17	3	4	48	12465	4
Fourth " - - -	12	11	17	5	30	7	16	98	13219	7
Annual ratio -	83	34	52	29	75	23	57	353	12604	28
PHTHISIS PULMONALIS.										
First quarter - -	3	6	4	1	3	–	11	28	12837	2
Second " - - -	1	–	–	2	2	1	4	10	11898	1
Third " - - -	–	1	–	6	5	1	–	13	12465	1
Fourth " - - -	5	–	–	1	3	1	4	14	13219	1
Annual ratio -	9	7	4	10	13	3	19	65	12604	5
RHEUMATISM.										
First quarter - -	47	177	108	33	42	33	134	574	12837	45
Second " - - -	86	187	127	35	62	33	76	606	11898	48
Third " - - -	56	198	73	15	58	24	37	461	12465	37
Fourth " - - -	59	126	84	26	47	23	88	453	13219	34
Annual ratio -	248	688	392	109	209	113	335	2094	12604	166

In regard to pulmonary diseases, the most striking fact, in this class of posts, is the high ratio of catarrhal affections, compared with the two preceding ones. The results also show prominently the comparative influence of the seasons in their causation, the ratios of the first and fourth quarters being respectively 175 and 169, and of the second and third, 120 and 86. As respects the remaining pulmonic diseases, the results are not very dissimilar from those exhibited in the foregoing classes. The various relations of our different systems of climate, in reference to these diseases, will be more fully elucidated, when the investigation of each class of posts shall have been completed. Suffice it to say that on the coast of New England, as the ocean modifies the atmospheric temperature, the annual ratio of *catarrhal* cases per 1,000 of strength is 233; on the great lakes, where a similar modifying agency is in operation, it is 300; whilst the third class, characterized by the extreme range of the thermometer, has a ratio as high as 552.

In the following table the annual results, in reference to this class of diseases, as well as the mortality from each, are exhibited. The total of deaths given are those only which occurred among men on the sick-list—a ratio considerably lower than that of the post returns, which include the deaths from all causes.

TABLE exhibiting the annual results and mortality of diseases.

Northern division.	Mean strength.	Ratio of cases per 1,000 of mean strength.					Deaths.						
		Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.	Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Hæmoptysis.	Total per medical returns.	Causes not specified.
Posts on the lakes - -	5973	300	19	30	9	358	1	4	–	9	–	65	12
Atlantic posts - - -	3130	233	22	26	9	290	–	1	–	15	–	140	16
Posts remote from the ocean and the lakes - - -	12604	552	17	28	5	602	–	3	1	22	1	119	16
Total - - -	21707	439	18	28	7	490	1	8	1	46	1	324	44

The following abstract exhibits, at a single glance, the relative mortality, extent of sickness, and comparative prevalence of certain diseases, in the three classes of posts adopted in reference to the northern division of the United States—

TABLE exhibiting the relative mortality, extent of sickness, and comparative prevalence of certain diseases.

Systems of climate.	Deaths per centum per medical returns.	Deaths per centum per Adjutant General's returns.	Ratio per 1,000 of mean strength under treatment annually.	Ratio of cases per 1,000 of mean strength.								
				Intermittent fever.	Remittent fever.	Synochal fever.	Typhus fever.	Diarrhœa and dysentery.	Respiratory organs.			
									Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.
North'n lakes	9-10	1 3-10	2185	193	33	16	4	253	300	19	30	9	358
Atlantic coast	1 5-10	2	1912	36	26	43	5	170	233	22	26	9	290
Stations remote from ocean and inland seas.	8-10	1 4-10	3103	151	24	45	5 9-10	300	552	17	28	5	602
†Average -	9-10	1 5-10	2660	143	26	37	2 4-10	269	439	18	28	7	490
†Average -	1 1-10	1 6-10	2400	217	28	35	3 3-10	243	362	19	28	8	412

In regard to the ratio of mortality, it is seen that there is little difference between the first and third class of posts. On the Atlantic coast, it is about 50 per cent. higher than the mean of the other two classes—a result to be ascribed mainly to the circumstance that the troops have more easy access to spirituous liquors. Moreover, in the last class, more than one-fourth of the aggregate mean strength consists of the cadets at the military academy, among whom the usual effects of alcoholic potations among soldiers are not exhibited.

As regards the relative degree of salubrity, as shown by the ratio of cases reported in each class, it appears that the third is about 50 per cent. higher than the mean of the other two; but in estimating the value of this result, it is necessary to bear in mind the high average of West Point and Fort Leavenworth, as detailed under each post respectively.

In reference to intermittent fever, a striking difference is found to obtain. On the lakes this disease is very rife, whilst on the New England coast it is almost unknown, the cases reported being generally of foreign origin. The ratio of the third class is also high, owing more especially to the locality of the Forts Crawford and Leavenworth, the latter being near the 39th degree of latitude. At Hancock Barracks, West Point, and Forts Snelling and Winnebago, the occurrence of the disease is unu-

* In the ratio of diseases of the respiratory organs, Fort Independence is excluded.

† Of these two averages, the former expresses the result of a comparison between the aggregate strength of the three divisions, and the aggregate of cases and deaths, whilst the latter shows the mean of the results obtained in each class. The first exhibits the actual ratios given by the statistics of the posts, whereas the second supposes an equal number of troops in each division.

sual. As respects remittent fever, there is no great contrast presented in the averages of the three classes—a result somewhat inconsistent with the doctrine of its common origin with intermittent fever, when it is considered that the New England coast enjoys an exemption from the latter. In regard to synochal fever, it is found that the ratio of the first class is much the lowest; and in the third, a great majority is furnished by West Point, many of these being reported under the name of *ephemeral*. Of typhus fever, the average is far the lowest in the third class. Diarrhœa and dysentery show considerable diversity in their ratios, being much the lowest on the sea-coast, thus implying a connexion with diseases of malarial origin.

Pulmonary diseases in general are no less under the influence of season and climate than intermittent fever. In tracing out the comparative prevalence of the more prominent modifications of this class of diseases, so far as relates to their annual results, it is found that, as a class, the ratio of the third is nearly twice as high as the mean of the other two systems of climate; but this result arises wholly from the greater prevalence of catarrh and influenza. The averages of pneumonia and pleuritis exhibit little variation. The ratio of phthisis pulmonalis, however, contrary to the general result, is much lower in the third than in either of the other two classes; but this difference is more apparent than real, from the circumstance that nearly all the fatal cases of consumption are ascribed to the abuse of ardent spirits. In the third class, for example, if the results of West Point are excluded from the calculation, the ratio of cases per 1,000 rises nearly to 7; and the difference still existing is doubtless owing to the greater facility of obtaining, at the posts along the seaboard, inebriating potations.

The following table shows the number of deaths in each month, according to the post returns, in the three classes described—

TABLE showing the number of deaths in each month.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
22	27	26	26	32	28	55	41	39	25	37	40

The ratio of November and December may be regarded as the highest, for in the total of July are included thirty deaths from epidemic cholera, in August six, and in September six, from the same cause.

MIDDLE REGION OF THE UNITED STATES.

This division comprises two general systems of climate, which bear the same meteorological relation to each other as the modified climate of the great lakes and the coast of New England does to that of the class last described. Whilst in the northern division a steady temperature predominates, this one, notwithstanding the extremes of temperature are

much more modified, is characterized by variableness. On reference to abstracts A, B, C, of the "Remarks" to the meteorological register, the difference in the climate of the two regions of the middle division, so far as temperature is concerned, may be seen. Thus, Jefferson Barracks shows a greater contrast in the seasons than Washington City; and on comparing Fort Gibson with Fort Monroe, which is 1° 32′ north of the former, a similar result is exhibited.

Of the two classes of posts pertaining to this division, the *first* embraces the stations on the sea-coast and inlets of the ocean between the Delaware and Savannah rivers, viz: Forts Delaware, McHenry, Severn, Washington, and Monroe, Bellona Arsenal, Forts Moultrie, and Johnston, and Oglethrope Barracks; and the *second* comprises the interior posts, viz: Jefferson Barracks, Forts Gibson, Smith, and Coffee, Towson, and Jesup.

I. THE ATLANTIC COAST.

FORT DELAWARE.

LATITUDE 39° 35′, LONGITUDE 75° 29′.

Fort Delaware is situated on a mud island, formed by the deposition of alluvion in the Delaware. The soil is of such a spongy nature that any heavy body will gradually sink for several days. It is four miles from Newcastle, and about forty miles below Philadelphia.

The diseases reported within the ten years are condensed in the subjoined abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Delaware, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	65	119	99	116	-	-	-	-	-	-	399	102	106	94	70*	-	-	-	-	-	-	372
Intermittent fever - -	-	6	-	1	-	-	-	-	-	-	7	4	4	12	3	-	-	-	-	-	-	23
Remittent fever - -	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	16
Synochal fever - -	4	-	7	-	-	-	-	-	-	-	11	2	-	-	-	-	-	-	-	-	-	2
Typhus fever - -	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	7	2	2	23	-	-	-	-	-	-	34	9	1	4	3	-	-	-	-	-	-	17
Diseases of the digestive organs - -	1	34	4	6	-	-	-	-	-	-	45	8	21	-	1	-	-	-	-	-	-	30
Diseases of the brain and nervous system - -	1	3	1	-	-	-	-	-	-	-	5	3	2	5	-	-	-	-	-	-	-	10
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	1	1	3	2	-	-	-	-	-	-	7	2	2	1	1	-	-	-	-	-	-	6
Venereal affections -	1	3	1	4	-	-	-	-	-	-	9	9	1	3	-	-	-	-	-	-	-	13
Ulcers and abscesses -	-	1	2	-	-	-	-	-	-	-	3	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries -	1	5	-	4	-	-	-	-	-	-	10	10	-	1	1	-	-	-	-	-	-	12
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases - -	3	12	3	6	-	-	-	-	-	-	24	20	2	1	3	-	-	-	-	-	-	26
Total - - -	20	67	23	46	-	-	-	-	-	-	156	85	33	29	12	-	-	-	-	-	-	159

* Average mean strength for two months.

ABSTRACT—Continued

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	116	95	91	-	-	-	-	-	-	-	302	116	87	126	-	-	-	-	-	-	-	329
Intermittent fever - -	31	96	12	-	-	-	-	-	-	-	139	35	1	11	-	-	-	-	-	-	-	47
Remittent " - -	36	-	4	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-
Synechal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	3	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	2
Diseases of the respiratory organs - - -	1	-	-	-	-	-	-	-	-	-	1	6	1	18	-	-	-	-	-	-	-	25
Diseases of the digestive organs - - -	28	20	3	-	-	-	-	-	-	-	51	20	12	-	-	-	-	-	-	-	-	32
Diseases of the brain and nervous system - -	3	4	-	-	-	-	-	-	-	-	7	6	2	2	-	-	-	-	-	-	-	10
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	6	-	3	-	-	-	-	-	-	-	9	1	1	1	-	-	-	-	-	-	-	3
Venereal " - -	2	-	1	-	-	-	-	-	-	-	3	5	-	4	-	-	-	-	-	-	-	9
Ulcers and abscesses -	1	-	1	-	-	-	-	-	-	-	2	1	-	1	-	-	-	-	-	-	-	2
Wounds and injuries -	15	2	2	-	-	-	-	-	-	-	19	14	1	2	-	-	-	-	-	-	-	17
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
All other diseases -	8	3	5	Evacuated.	-	-	-	-	-	-	16	13	3	5	-	-	-	-	-	-	-	21
Total - - -	134	125	31	-	-	-	-	-	-	-	290	103	21	45	-	-	-	-	-	-	-	169

Under the class of diseases of the respiratory organs are comprised 55 catarrh, 2 pneumonia, 6 pleuritis, and 11 phthisis pulmonalis; under the head of digestive organs, 21 diarrhœa and dysentery, 87 cholic and cholera, and 20 hepatitis; under the class of brain and nervous system, 1 epilepsy, and 4 mania a potu; and under that of venereal affections, 25 gonorrhœa, and 9 syphilis.

As the total of deaths, according to the post returns, is eleven, and the aggregate mean strength is three hundred and fifty, the annual ratio of mortality is a fraction above three per cent. All of the deaths are reported in the medical returns, viz: two remittent fever, one intermittent fever and anasarca combined, two phthisis pulmonalis, one pneumonia typhoides, two delirium tremens, one cynanche maligna, one aneurism of the aorta, and one ulcer in ano. Although the ratio of mortality is high, yet the causes of death are, in most instances, not ascribable to climate or local position. The high average of intermittent fever, in the summer of 1829 and 1830, is attributed to the marsh mud thrown up from a marsh ditch encircling the island. The annual ratio of intermittent fever is sixty-two per cent., and that of remittent fever is sixteen per cent. In 1831, many cases of the most obstinate constipation of the bowels were reported both at this post and at Fort Severn, followed in some instances by paralysis of the hand and fore-arm. It was ascribed to the white lead used by the men in cleaning their belts and gloves. As it was necessary to moisten the material, and apply it by means of a sponge, the hands were daily exposed to its action. As the belts were also rubbed with pumice stone, particles of the lead may have been inhaled. It became necessary to abandon its use, substituting pipe clay. This post, in consequence of a conflagration, was evacuated on the 9th of February, 1831. The troops remained at Delaware City until the 28th of the same month, when the head quarters were established at Newcastle. In June, 1832, the troops were transferred to Fort Columbus.

On referring to the history of this post, prior to 1829, it is found that in the third quarter of 1825 nearly every man suffered from diarrhœa and intermittent and remittent fever, (Vide p. 46,) and in 1827, the deleterious effects arising from the introduction of lead into the system was manifested in a large portion of the command. See pp. 56 and 57.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE showing the relative agency of the seasons in the production of disease in general.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
4 first quarters	399	156	391
4 second " -	372	159	427
3 third " -	302	290	960
3 fourth " -	329	169	514
Annual ratio -	350	774	2,211

Hence every man, on an average, was reported sick once in about every five months and a half.

FORT McHENRY.

LATITUDE 39° 17′ N., LONGITUDE 76° 36′ W.

Situated on a peninsula, bounded on the one side by the Patapsco river, and on the other by the harbor of Baltimore, Fort McHenry is about three miles distant from the centre of the city, in a southerly direction. It occupies the whole of the extremity of the peninsula, covering an area of 55 or 60 acres; the fort is elevated about 36 feet above the level of the river, when at high water mark; and as this elevation has a gradual slope in every direction, the drainage is naturally good.

The surrounding country is rather low and level, with occasional undulations; but there are no mountains or very high lands in the vicinity. The soil is mostly argillaceous and silicious. During the summer, the prevailing winds vary from south to east, whilst those of the winter are mostly north-west. When blowing from the south, the current of air traverses some low land called Romney Marsh, on the opposite side of the Patapsco; but the distance of this marsh from the fort is upwards of a mile.

The annual quantity of rain, on an average of three years, is 39 inches.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort McHenry, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	118	119	112	120	-	61	62	60	-	-	652	108	109	113	91	60	58	59	-	-	-	598
Intermittent fever - -	3	22	12	5	-	7	20	2	-	-	71	3	29	27	13	3	5	21	-	-	-	101
Remittent fever - -	-	-	-	-	-	-	-	1	-	-	1	2	1	-	2	-	-	-	-	-	-	5
Synochal fever - -	1	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	43	17	5	11	-	7	13	4	-	-	100	15	9	5	6	3	9	6	-	-	-	53
Diseases of the digestive organs - - -	8	3	-	1	-	7	8	-	-	-	27	28	20	8	3	7	23	9	-	-	-	98
Diseases of the brain and nervous system - -	1	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	1	-	-	-	5
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	4	1	1	4	-	-	3	-	-	-	13	4	-	3	1	-	3	4	-	-	-	15
Venereal affections -	13	9	8	1	2	3	-	-	-	-	36	8	4	3	5	2	3	1	-	-	-	26
Ulcers and abscesses -	2	-	1	-	5	3	3	-	-	-	14	2	1	-	-	-	-	-	-	-	-	3
Wounds and injuries -	12	8	7	19	9	16	10	-	-	-	81	11	12	13	7	4	6	10	-	-	-	63
Ebriety - - -	-	-	-	1	2	-	4	-	-	-	7	4	1	1	1	2	-	-	-	-	-	9
All other diseases - -	24	15	2	10	5	8	3	-	-	-	67	23	6	3	4	1	4	22	-	-	-	63
Total - - -	112	75	36	52	-	44	72	30	-	-	421	104	83	63	42	22	53	74	-	-	-	441

Report defective.

May 20th, embarked for Ft. Mitchell.

Under the class of diseases of the respiratory organs are comprised 913 catarrh and influenza, 86 pneumonia, 211 pleuritis, and 49 phthisis pulmonalis; under the head of digestive organs, 2,644 diarrhœa and dysentery, 244 cholic and cholera, and 4 hepatitis; under the class of brain and nervous system, 27 epilepsy, 1 apoplexy, 80 delirium tremens, and 6 nyctalopia; and under that of venereal affections, 93 gonorrhœa, and 80 syphilis.

As the total of deaths, according to the post returns, is 159, and the aggregate mean strength is 3,313, the annual ratio of mortality is $4\frac{8}{10}$ per cent. Of the deaths, 137 are reported in the medical returns, viz. 8 remittent fever, 1 intermittent fever, 18 phthisis pulmonalis, 8 pneumonia, 1 pleuritis, 1 hœmoptysis, 2 gastro-enteritis, 3 dysentery, 6 chronic diarrhœa, 24 cholera epidemica, 1 stricture of the intestines, 1 rheumatism, 1 dropsy, 1 scorbutus, 10 mania a potu, 19 ebriety, 1 apoplexy, 1 atrophia, 4 worn-out by obscure chronic affections, 1 ulcer, 1 caries of the maler bones, 1 sudden, 1 gun-shot wound, 2 casualties, 2 suicide, and 18 from causes not designated. Excluding the cases of epidemic cholera and suicide, the annual ratio of mortality is $3\frac{6}{10}$ per cent.

What a commentary is here afforded upon the abuse of inebriating potations! From the direct effects of this moral pestilence 29 deaths are reported, whilst the mortality from phthisis pulmonalis, pneumonia, and epidemic cholera, making 50 deaths, was owing chiefly to the same cause. "To this last cause," (ebriety,) says Surgeon Beaumont, in 1834, "may be traced the origin, either directly or indirectly, of more than three-fourths of the diseases and injuries of this command." And this remark is equally applicable to every military station; a conclusion abundantly established on every page of these statistics.

The diseases of this post are not of a character to require much comment. From fevers there are only 8 deaths reported. The annual average of intermittent fever is 34 per cent., and that of remittent 16. The prevalence of fevers of malarial origin, according to Surgeon De Camp, depends much upon the course of the winds. Whenever, in the months of August and September, easterly winds prevail, traversing the "great bottom" on the opposite side of the river, intermittents become rife.

"The position of these barracks, with regard to health," says Surgeon De Camp, "is as good as any that could have been selected upon the bank of this river; but from an acquaintance with the diseases of this country for more than 22 years, I am enabled to state that fewer cases occur, and when they do they are much milder in their character generally, when removed from the river bank. This has been strikingly exemplified during the present season. At least three-fourths of the persons at this post have had fever, and at the distance of one mile from the river in the immediate vicinity, there has scarcely been a single case, which I attribute to the distance and the intervention of a dense forest. I made the same observation when I practised medicine in St. Louis a few years since. The highest grades of fever were at that time common in town, when, at the same time, the diseases in the country, and at the distance of a few miles only, were mild intermittents."

In the third quarter of 1832, 20 cases of cholera asphyxia are reported; one of which only terminated fatally. In the first month of the following quarter, there were 6 cases and 5 deaths from the same disease. In the third quarter of 1833, there are reported 3 cases and two deaths. In 1834, spasmodic cholera again appeared, there being in the second quarter 24 cases and 7 deaths, and in the third 10 cases and four deaths. Almost every one in the command was affected with diarrhœa, which often terminated in cholera. In 1835, in the second quarter, are reported 7 cases and 4 deaths, and in the third quarter, 1 case and 1 death. This was the last appearance of this mysterious epidemic.

In the fourth quarter of 1834, a remarkable case of *tabes mesenterica* is reported by Assistant Surgeon Hughey. The patient (a soldier) lingered five months in the hospital, during which period he underwent an extraordinary degree of attenuation; from being a man, who, in the vigor of health, weighed 170 pounds, he was reduced to the weight of 64 pounds.

The following table exhibits the comparative agency of the seasons in the etiology of disease in general:

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated annually.
7 first quarters -	2,942	2,088	710
8 second " -	2,907	2,172	816
9 third " -	3,824	3,984	1,042
8 fourth " -	3,098	2,721	878
Annual ratio -	3,193	10,965	3,446

Every man, on an average, has consequently been registered on the sick list once in every three and a half months.

FORT GIBSON.

LATITUDE 35° 47′, LONGITUDE 95° 10′.

This post is situated on the east bank of the Neosho or Grand river, in Arkansas, and is distant about 425 miles north of the Gulf of Mexico, measuring from a point near the mouth of the Sabine river. The site of the fort is about 100 yards from the banks of the Neosho, and three miles from its mouth. About a mile and a half to the southwest, towards the Arkansas river, is a lake surrounded by marshes; and, as its level varies little from that of the fort, the drainage of the latter is consequently very defective. As the fort was originally located in a canebrake, the soil partakes in a very high degree of what is designated, in the language of the country, "river-bottom land." It is skirted on three

sides by elevated prairie, about four miles in extent, environed by a chain of hills. The opposite side of the river presents a canebrake, extending a mile above and below the fort, interspersed with lakes and marshes towards the southwest. The soil is of a character admitting of the most prolific cultivation. Indian corn is the staple commodity; and of mineral productions the principal are coal and salt.

As regards thermometrical observations, it is found that the mercury rises higher at this post than at any other in the United States. The mean annual quantity of rain, based on three years' observation, is 30.64 inches—one of the lowest averages among 28 posts at which observations upon the rain-gauge have been made. The prevailing winds, which are southerly from the Gulf of Mexico, traverse the marshes and lakes above described.

It thus appears that all the circumstances most conducive to the evolution of malaria obtain. The soil is composed of a rich alluvion; solar heat is of the most intense character; and the quantity of rain, although adequate to the maintenance of a certain degree of moisture, is not sufficient to overflow the low lands during the summer season.

The diseases reported within the 10 years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Gibson, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	174	272	229	373	482	484	472	653	282	557	3978	205	260	220	434	429	324	505	305	443	699	3824
Intermittent fever -	14	19	20	36	29	36	111	177	17	140	599	11	31	38	52	20	52	109	81	99	311	804
Remittent " - -	1	-	1	9	12	3	8	11	-	2	47	-	5	6	1	10	20	17	10	-	1	70
Synochal " - -	2	-	-	-	-	-	8	-	-	1	11	-	-	-	1	-	-	-	-	-	1	2
Typhus " - -	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	23	42	30	74	73	54	252	121	38	88	795	25	9	47	74	29	19	38	30	9	52	332
Diseases of the digestive organs - - -	2	35	24	34	14	30	55	63	32	65	354	19	21	64	79	68	134	145	97	105	149	881
Diseases of the brain and nervous system -	-	1	-	-	-	-	2	3	3	18	27	1	3	-	1	1	4	-	4	4	5	23
Dropsies - - - -	-	-	-	-	-	-	5	-	1	-	6	2	1	1	1	1	-	4	-	-	-	10
Rheumatic affections -	2	13	12	8	10	15	13	43	8	15	139	2	4	-	2	2	14	21	24	6	21	96
Venereal " - -	10	6	1	3	1	4	2	2	16	13	58	3	7	-	-	-	1	4	4	6	18	43
Ulcers and abscesses -	6	13	4	10	4	4	25	35	10	15	126	5	3	1	20	5	7	10	18	13	21	103
Wounds and injuries -	22	50	27	56	46	44	19	94	25	66	449	18	64	45	72	25	33	38	34	33	59	421
Ebriety - - - -	8	22	9	16	-	20	9	15	12	2	113	10	30	24	52	39	12	3	13	15	13	211
All other diseases -	4	29	28	39	70	37	29	119	5	67	427	20	50	39	17	68	46	55	19	25	84	423
Total - - -	94	230	156	285	259	247	538	685	167	492	3153	116	228	265	372	268	342	444	334	315	735	3419

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	258	253	242	447	439	491	409	135	728	645	4047	265	245	254	691	512	504	559	126	654	597	4407
Intermittent fever - -	29	23	133	104	135	110	497	54	536	369	1990	54	93	63	34	150	195	255	47	305	297	1493
Remittent fever - -	6	136	18	36	79	151	128	35	59	23	671	7	5	-	34	41	29	29	16	54	13	228
Synochal fever - -	-	21	28	-	-	-	2	-	38	-	89	-	-	16	-	-	7	-	-	23	-	46
Typhus fever - -	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	1	-	-	-	1
Diseases of the respiratory organs - - -	5	-	15	10	22	13	26	7	18	10	126	39	5	42	74	9	39	26	3	49	53	339
Diseases of the digestive organs - - -	11	27	50	168	352	84	73	16	240	247	1268	15	22	56	52	36	196	114	6	140	115	752
Diseases of the brain and nervous system - -	-	-	-	5	1	10	2	1	7	1	27	1	-	-	3	-	-	5	1	9	3	22
Dropsies - - -	2	1	-	5	7	-	1	-	10	1	27	1	-	-	-	-	5	-	1	3	3	13
Rheumatic affections -	2	7	14	13	3	3	8	-	11	17	78	4	5	11	4	10	15	7	-	16	13	85
Venereal affections -	1	2	1	2	1	1	-	-	27	15	50	10	1	1	3	-	-	-	1	23	15	54
Ulcers and abecesses -	1	2	3	17	4	7	20	8	31	73	166	23	1	6	25	9	14	28	9	11	22	148
Wounds and injuries -	7	40	36	106	20	20	30	9	38	84	390	23	24	69	72	26	22	63	10	44	48	401
Ebriety - - -	-	18	12	94	9	11	-	3	17	30	194	15	27	39	72	13	6	9	2	2	15	200
All other diseases - -	105	24	31	230	119	23	41	7	55	115	750	21	27	17	33	16	39	60	8	23	61	305
Total - - -	169	301	341	790	752	433	828	140	1089	985	5828	313	210	320	406	310	567	597	104	702	658	4087

Under the class of diseases of the respiratory organs are comprised 1,106 catarrh, influenza, and acute bronchitis; 259 pneumonia, 198 pleuritis, and 42 phthisis pulmonalis. Under the head of digestive organs, 2,236 diarrhœa and dysentery, 339 cholic and cholera, and 30 hepatitis. Under the class of brain and nervous system, 14 epilepsy, 3 apoplexy, 34 mania a potu, and 13 nyctalopia; and under that of venereal affections, 127 gonorrhœa, and 78 syphilis.

It is necessary to observe that the above abstract, both as regards the diseases and the mean strength, includes the dragoon camp at Fort Gibson. As the sick report of the dragoons for the first quarter of 1837 is wanting, a deduction of 152 from the actual strength has been made. As the sick of the "mounted rangers," who were at this post in 1833–'4, are not included, so has the mean strength been correspondingly reduced.

As the total of deaths, according to the post returns, is 277, and the aggregate mean strength is 4,269, the annual ratio of mortality is $6\frac{6}{10}$ per cent. Of the deaths, 210 are reported in the medical returns, viz: 44 remittent fever, 5 intermittent, 4 continued, 2 mucous, and 2 typhus fever, 26 phthisis pulmonalis, 11 pneumonia, 1 pleurisy, 1 hœmoptysis, 1 serous effusion into the lungs, 1 cynanche trachealis, 2 rubeola, 1 tonsilitis, 7 dysentery, 2 diarrhœa, 1 gastro-enteritis, 18 epidemic cholera, 3 apoplexy, 1 phrenitis, 1 arachnitis acutus, 1 convulsions, 1 neuralgia pedis, 2 delirium tremens, 6 ebriety, 2 anasarca, 5 erysipelas, 5 obscure chronic visceral lesions, 1 poisoned by opium, 2 wounds, 1 sudden, 1 homicide, 2 suicide, 3 submersion, 2 casualties, and 45 from causes not stated. Excluding, as before, the deaths from epidemic cholera, homicide, suicide, and submersion, the annual ratio of mortality is $4\frac{6}{10}$ per cent.

Fevers of malarial origin are more rife here than at any other station. The annual average of intermittent fever is 120 per cent., and that of remittent fever is 25 per cent. In the first and second quarters, the averages are comparatively low. Although the ratio of these fevers is about thrice as high as at Jefferson barracks, yet it is found that the annual ratio of diarrhœa and dysentery at these two posts bears an inverse proportion, being as 55 to 80.

In the third quarter of 1830, the ratio of intermittent fever is very high. "Though the subjects of fever," says Assistant Surgeon Pitcher, "have been numerous at this station during the past quarter, the cases generally have been less violent in their character than those I have been accustomed to see in the lower parts of Michigan Territory." The 21 cases placed under the head of synochal fever were reported as *ephemeral*. In the report of the fourth quarter, in which there was no death, Surgeon P., with his usual discrimination, remarks as follows—"The five cases reported under the head of remittent fever, were attended with a great degree of prostration and dry tongue, still they differed so much from the cases of typhus which I have seen at Fort Brady, that I preferred retaining them in their present position. One of the cases of pneumonia also exhibited some of the phenomena of typhus." In the report of the third quarter of 1831, the same officer observes, that "the weather, during most of the quarter, has been unusually cool, while

diseases have been more virulent in character than is common to this region. I have never before observed such general and striking indications of gastric and intestinal irritation, in conjunction with stupor and muscular prostration. Repeated venesection has been my chief remedy. Of the 46 cases of synochus and remittent fever, five proved fatal. One died suffused with a yellow tinge, and the others of congestions, formed before being sent to the hospital, which I could not afterwards remove." In the following quarter, in which no death is reported, he says—"Since the appearance of synochus, in all cases, the blood when drawn from a vein has been remarkably dark, no matter in what stage of fever or under what circumstances it was abstracted." Again, in the first quarter of 1832, he remarks—"The same tendency to congestion in all cases attended with fever, which characterized the diseases of last quarter, still continues. As usual, I have trusted very much to the lancet in the management of these affections. The plan of treating pneumonia adopted by M. Laennec, (with large doses of tart. ant.,) I find to be too tardy for this region." In the second quarter, it is remarked by Dr. Pitcher, now surgeon, that "the cases of diarrhœa were mostly among the recruits, many of whom were suffering from it when they arrived. Intermittents have been mild; still they are best managed by free depletion. The sulphas quinine I seldom use until the paroxysms are broken up." In the third quarter of this year, 9 deaths occurred. Of these, 4 (2 directly and 2 indirectly) arose from rubeola, which prevailed as an epidemic, 54 cases being reported. In one of the fatal cases it supervened upon remittent fever, in which case the eruption would appear with the hot stage and disappear on its decline. "Our diseases this season," says Surgeon Pitcher, "have been comparatively mild, the fatal issue in all cases, except the one which was ushered in with an orange state of the skin, appearing to depend upon contingencies having no relation to the prevalent epidemics, but influencing their mode of terminating. You will remark that the cases of 'diarrhœa' are numerous. Many of these, after having been entered thus upon the register, were followed up by fever and with dry tongue, of which they seemed to be the forming state."

In the third quarter of 1833, there are reported 150 cases of epidemic cholera, 16 of which terminated fatally. Besides these, there were 20 cases in the families about camp. The total of cases this quarter was much augmented by the hardships endured by two detachments sent out in May—one in pursuit of some Pawnees, and the other to cut roads for the Choctaws. In the last quarter of this year, Surgeon P. observes, that "dysenteric cases in several instances have assumed the character of tertians, that is, the patient would have his well day as in an intermittent of that type." This disposition in many diseases to exhibit a paroxysmal and strictly periodical character has been quite recently noticed by Surgeon W. L. Wharton. "As a result of the general prevalence of malaria," he says, "it may be stated that most of the diseases occurring at this station partake of the intermittent character, embracing pleurisies, cholera morbus, dysentery, diarrhœa, rheumatism, hœmorrhage, &c." The strict periodicity of these affections, and their

subjection to the same remedies which are found to arrest the course of intermitting fever, imply a close alliance, if not a common origin.

The year 1834, the last quarter of which was marked by extraordinary fatality, comes now under consideration. According to the Adjutant General's returns, the annual mean strength was 485, and the total of deaths 103, the ratio of mortality being $21\frac{8}{10}$ per cent. In the first quarter, two deaths are reported; and, in the second, three deaths; 53 cases from the dragoon regiment having been received into the hospital in the month of June. In the third quarter, 11 fatal cases are reported. "Of these," says Assistant Surgeon Wright, "four died of phthisis pulmonalis, one of apoplexy, and 2 were of the dragoon regiment sent into the hospital in a moribund state. Assistant Surgeon Welsh, and Lieutenants West and Eastman, who died at this post during the quarter, are not included in this report." In the fourth quarter, 47 deaths are reported, 25 in the hospital of the post proper and 22 in that of the dragoon camp. It thus appears that, for the whole year, 37 deaths remain unaccounted for in the quarterly sick reports. It is to be regretted, too, that the reports given are defective in precise details. Two of the attending physicians, Hales and Welsh, having sickened and died. In the report from the dragoon camp, the simple fact is stated that 22 died, whilst that of the post proper merely shows that 25 deaths arose from fevers and their sequelæ. It is necessary to add, that in the catalogue of the causes of mortality, 25 have been classed as remittent fever, and the rest placed under the head of those the causes of which are not specified. The following extracts, however, from the report of Surgeon S. G. J. Decamp, dated Fort Gibson, Dec. 31st, 1834, throw much light upon the subject—

"The mortality, although great, has not been more so than we had reason to anticipate from the malignant character of the disease early in the season. The deaths have been confined entirely to those who were taken sick previously to the 30th of September. They were all originally fever cases, terminating either in dropsy or dysentery. Some have died of excessive ptyalism from mercury, taken before or soon after their return to this post. Post mortem examinations of dysenteric cases have shown great engorgement of the mesentery, inflammation of the mucous membrane of the bowels, and an enlarged and engorged state of the liver and spleen. In the treatment of these cases, much perplexity and many contradictory indications were presented. Tonics and stimulants seemed often to be imperiously demanded, but the irritability of the bowels, with red tongue, rendered them inadmissible. The ptyalism, which had continued in some cases for many weeks, would, after disappearing for a time, burst forth spontaneously, and hurry the victim to the grave with a dreadful destruction of the soft parts about the mouth and the cheeks. Opiates, absorbents, diaphoretics, and demulcents, with tonics when admissible, have been the remedies relied upon, sometimes with good effect, but too often, I regret to add, with no advantage whatever. Intermittents are still frequent, but they generally yield readily to the use of quinine.

TABLE exhibiting the ratio of mortality during a period of ten years.

Years.	Mean strength.	Total of Deaths.	Ratio of deaths per 1,000 of mean strength.
1829	226	5	32
1830	258	6	23
1831	236	15	64
1832	486	19	39
1833	514	32	62
1834	485	103	212
1835	570	39	68
1836	305	4	13
1837	565	36	64
1838	624	18	29
Aggregate -	4,269	277	65

Comparing this result with the ratio of mortality in the 1st regiment of Infantry at Baton Rouge, from 1819 to 1824 inclusive, it is found that the latter is more than three-fold higher. The ratio for the six years at Baton Rouge is nearly 21 per cent., and that of 1822, the most fatal year, is almost 26 per cent.

The comparative agency of the seasons, at Fort Gibson, in the causation of disease in general is shown in the following tables—

TABLE showing the number of deaths in each month.

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Total of deaths in each month.	20	16	9	3	11	13	26	26	59	46	28	20	277

TABLE showing the relative agency of the seasons in the production of disease in general.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
10 first quarters	3,978	3,153	792
10 second " -	3,824	3,419	894
10 third " -	4,047	5,828	1,440
10 fourth " -	4,407	4,087	927
Annual ratio -	4,064	16,487	4,057

Every man, on an average, has consequently been reported sick once in about every three months.

ABSTRACT exhibiting a condensed view of the principal diseases at Forts Smith and Coffee, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	-	-	-	-	-	51	51	53	44	54	253	-	-	-	-	-	-	54	51	47	55	207
Intermittent fever - -	-	-	-	-	-	9	14	12	5	8	48	-	-	-	-	-	-	11	4	3	14	31
Remittent fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Synochal fever - -	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	1
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	-	-	-	-	6	22	1	3	1	33	-	-	-	-	-	-	3	-	2	-	5
Diseases of the digestive organs - - -	-	-	-	-	-	4	5	5	2	3	19	-	-	-	-	-	-	5	5	1	1	12
Diseases of the brain and nervous system - -	-	-	-	-	-	1	-	-	-	1	2	-	-	-	-	-	-	-	-	1	1	2
Dropsies - - -	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	1	5	3	-	5	14	-	-	-	-	-	-	3	1	1	2	7
Venereal " -	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	1	-	1	-	2
Ulcers and abscesses -	-	-	-	-	-	2	2	4	1	1	10	-	-	-	-	-	-	3	1	-	6	10
Wounds and injuries -	-	-	-	-	-	5	6	6	4	14	35	-	-	-	-	-	-	4	2	5	-	11
Ebriety - - -	-	-	-	-	-	4	-	-	9	-	13	-	-	-	-	-	-	-	-	5	-	5
All other diseases - -	-	-	-	-	-	4	6	-	3	4	17	-	-	-	-	-	-	6	3	2	5	16
Total - - -	-	-	-	-	-	36	62	32	27	39	196	-	-	-	-	-	-	36	18	20	29	103

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	-	-	-	-	56	-	56	49	56	53	270	-	-	-	-	-	51	56	44	54	-	205
Intermittent fever - -	-	-	-	-	52	-	28	1	17	22	120	-	-	-	-	-	16	11	7	17	-	51
Remittent " - -	-	-	-	-	-	-	11	1	6	8	26	-	-	-	-	-	1	-	-	4	-	5
Synochal " - -	-	-	-	-	21	-	-	4	-	-	25	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	-	-	-	-	8	-	3	8	4	4	27	-	-	-	-	-	12	-	2	2	-	16
Diseases of the digestive organs - - -	-	-	-	-	42	-	4	4	7	14	71	-	-	-	-	-	15	5	4	6	-	30
Diseases of the brain and nervous system - -	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	-	1	1	2	2	6	-	-	-	-	-	2	2	1	2	-	7
Venereal " -	-	-	-	-	-	-	-	-	2	1	3	-	-	-	-	-	-	1	-	1	-	2
Ulcers and abscesses -	-	-	-	-	-	-	4	5	4	6	19	-	-	-	-	-	4	2	7	-	-	13
Wounds and injuries -	-	-	-	-	37	-	3	5	4	9	58	-	-	-	-	-	15	5	6	5	-	24
Ebriety - - -	-	-	-	-	25	-	1	3	5	4	38	-	-	-	-	-	-	-	1	3	-	4
All other diseases - -	-	-	-	-	8	-	11	2	4	6	31	-	-	-	-	-	7	4	-	4	-	15
Total - - -	-	-	-	-	199	-	66	34	55	76	430	-	-	-	-	-	75	30	28	44	-	177

Under the class of diseases of the respiratory organs are comprised 70 catarrh, 6 pneumonia, and 4 pleuritis; under the head of digestive organs, 97 diarrhœa and dysentery, 22 cholic and cholera, and 1 hepatitis; under the class of brain and nervous system, 1 epilepsy, and 4 mania a potu; and under that of venereal affections, 1 gonorrhœa and 8 syphilis.

As the total of deaths, according to the post returns, is 20, and the aggregate mean strength is 291, the annual ratio of mortality is $6\frac{9}{10}$ per cent. Of the deaths, eleven only are reported in the medical returns, viz. 4 remittent fever, 2 pneumonia, 1 diarrhœa, 2 ebriety, and 2 from causes not specified, being $4\frac{7}{10}$ per cent.

The difference in the ratio of mortality between the medical and post returns is owing chiefly to accidental deaths. Thus, in the first quarter of 1834, it is remarked by Assistant Surgeon Welsh that, "during the same period, one soldier was drowned, another died suddenly in quarters from the excessive use of ardent spirits, and a third died in an hour after having received a severe beating from a whiskey retailer; none of which cases was entered on the register."

The annual average of intermittent fever is 107 per cent., and that of remittent fever is 14 per cent. The ratio of the former is nearly as high as that of Fort Gibson, whilst that of the latter is scarcely more than half as high. The total of deaths from remittent fever is four. The annual average of diarrhœa and dysentery is 41 per cent.

The relative agency of the seasons in the production of disease in general is exhibited in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated annually.
5 first quarters,	253	196	775
4 second " -	207	103	498
5 third " -	270	430	1,593
4 fourth " -	265	177	863
Annual ratio -	234	906	3,872

Hence every man, on an average, has been reported sick once in every three months.

FORT TOWSON.

LATITUDE 33° 51′ N., LONGITUDE 95° 01′ W.

This fort, which is situated upon the spot formerly occupied by Cantonment Towson, is about six miles northwest of Red river, and the same distance south and east from the Kiamichi. Immediately in the rear of the buildings is an abrupt ravine about 80 feet deep, varying in breadth from a few yards to half a mile, and bounded on the opposite

side by rolling hills, densely covered with oak and pine. Through it, at the foot of the hill, runs a creek, which has its source among the pine hills to the northwest of the fort, and which empties into Red river, a short distance below the Kiamichi. This bottom, which is covered with hickory, scrub-oak, etc., presents a marshy surface—the obvious source of malarial exhalations. In front of the fort, the ground descends gradually for a mile. At this point, the prairies commence and spread out in an undulating manner, occasionally interrupted by woods, to a great distance. In the immediate vicinity of the fort the soil, which is composed of light sand and clay, is not very productive. Upon the prairies the soil, although superficial, is much richer, based upon a thick stratum of limestone.

On an average of three years, the mean annual quantity of rain is 46.73 inches.

The diseases reported within the 10 years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Towson, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	68	-	-	176	208	169	145	186	122	83	1157	-	-	175	219	201	151	169	180	117	225	1437
Intermittent fever - -	3	-	-	2	13	30	125	41	37	27	278	-	-	5	7	14	49	56	45	39	39	254
Remittent fever - -	-	-	-	6	2	-	-	11	-	-	19	-	-	5	13	2	20	-	9	2	2	53
Synochal fever - -	-	-	-	-	-	4	-	-	-	-	4	-	-	8	-	2	-	-	-	-	-	10
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
Diseases of the respiratory organs - - -	2	-	Post re-established in April.	14	14	11	9	13	6	7	76	Post evacuated June 17th.	-	9	7	3	1	5	8	-	25	58
Diseases of the digestive organs - -	2	-		16	36	2	-	2	1	3	62		-	31	28	13	17	6	4	5	20	124
Diseases of the brain and nervous system - -	-	-		1	1	-	-	-	-	1	3		-	-	-	-	-	2	-	-	-	2
Dropsies - - - -	-	-		-	-	-	-	-	1	-	1		-	-	1	-	-	-	-	-	-	1
Rheumatic affections -	1	-		8	12	4	8	3	3	6	45		-	9	3	9	1	6	3	4	9	44
Venereal affections -	-			-	-	-	-	1	-	8	4		-	-	-	-	1	1	1	3	2	8
Ulcers and abscesses -	2			1	9	2	12	-	1	-	27		-	12	-	6	-	5	1	-	-	24
Wounds and injuries -	8			6	26	13	7	10	6	3	79		-	16	25	12	4	6	9	3	11	86
Ebriety - - -	2			-	-	-	-	-	-	-	2		-	-	-	-	-	-	-	-	-	-
All other diseases - -	1	No troops.		14	9	5	11	4	3	5	52		-	6	12	16	14	12	10	8	11	89
Total - - -	21	-	-	68	122	71	172	85	58	55	652	-	-	104	96	77	107	99	90	64	119	756

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	190	217	195	113	205	165	112	218	1415	-	-	183	212	186	148	194	140	108	217	1388
Intermittent fever - -	-	-	26	84	35	108	110	109	63	103	638	-	-	24	30	70	72	51	62	43	22	374
Remittent " - -	-	-	25	32	30	8	10	34	9	14	162	-	-	13	3	4	-	9	8	3	-	40
Synochal " - -	-	-	4	2	31	-	-	-	-	-	37	-	-	4	-	-	-	-	-	-	-	4
Typhus " - -	-	-	-	1	-	3	-	-	-	-	4	-	-	4	-	4	-	4	-	-	-	12
Diseases of the respiratory organs - - -	-	-	4	6	1	2	25	2	-	9	49	-	-	8	9	2	8	13	17	2	15	74
Diseases of the digestive organs - - -	-	-	43	46	28	5	4	63	9	31	229	-	-	13	37	20	1	28	2	25	17	143
Diseases of the brain and nervous system - -	-	-	1	-	-	-	1	-	-	1	3	-	-	4	-	1	-	-	1	-	-	6
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Rheumatic affections -	-	-	11	3	2	1	3	1	5	3	29	-	-	14	8	-	8	4	3	7	3	47
Venereal " - -	-	-	-	-	-	1	-	-	1	1	3	-	-	-	2	-	3	1	-	1	-	7
Ulcers and abscesses -	-	-	19	14	16	-	5	14	-	-	68	-	-	9	6	3	3	-	2	1	9	33
Wounds and injuries -	-	-	26	11	8	-	9	4	1	16	75	-	-	19	24	5	5	5	5	4	13	80
Ebriety - - -	-	-	-	-	-	-	-	3	-	-	3	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	-	15	26	26	2	13	15	8	16	121	-	-	13	7	5	14	6	16	3	13	77
Total - - -	-	-	174	225	177	130	180	245	96	194	1421	-	-	125	126	114	114	121	117	89	92	898

Under the class of diseases of the respiratory organs are comprised 150 catarrh, influenza, and acute bronchitis; 47 pneumonia, 36 pleuritis, and 13 phthisis pulmonalis. Under the head of digestive organs, 287 diarrhœa and dysentery, 172 cholic and cholera, and 6 hepatitis. Under the class of brain and nervous system, 5 epilepsy, and 1 mania a potu; and under that of venereal affections, 13 gonorrhœa and 9 syphilis.

As the total of deaths, according to the post returns, is 47, and the aggregate mean strength is 1,560, the annual ratio of mortality is 3 per cent. Of the deaths, 28 are reported in the medical returns, viz: 2 typhus, 2 remittent and 2 congestive intermittent fever, 4 phthisis pulmonalis, 1 pneumonia, 1 abscess of the lungs, 3 gastro-enteritis, 1 peritonitis, 2 dysentery, 1 intussusceptio, 1 gangrene, 1 drowned, 1 frozen when intoxicated, and 6 from causes not specified. Excluding the two cases of asphyxia from submersion and low temperature, the annual ratio of mortality is nearly two per cent. Besides these deaths, there were six among the Arkansas volunteers, viz. four typhoid pleurisy, one bilious congestive fever, and one erysipelas ademato des. When so ill as to be considered forlorn, these cases were sent in from camp to the hospital. As the volunteers and other detachments encamped at this post in 1836 are included in the post returns, an explanation of the disparity between the total of deaths given by these returns, and by the medical reports, is afforded.

This station, keeping in view the region in which it is located, has generally maintained a remarkable degree of salubrity. It is only when wide-spread epidemics prevail, as in the summer of 1839, that this post exhibits a high ratio of sickness. Intermittent fever, however, is very rife. The annual average of this type of fever is 114 per cent., and that of remittent is 20 per cent. In 1835, in a mean strength of 178, there are reported 342 cases of intermitting fever. In the first quarter of this year the sick report embraces 172 cases, of which 125 are intermitting fever. It is remarked that it yields readily to the ordinary course of treatment, but that it is liable to recur from the slightest causes. During the ten years, but six deaths are reported from fever. As regards the high ratio of intermittents, it would seem that a sufficient explanation is afforded in the topographical description of this station.

The relative agency of the seasons in the production of disease in general is shown in the following abstract—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	1,157	652	563
8 second " -	1,437	756	518
8 third " -	1,415	1,421	1,004
8 fourth " -	1,388	898	647
Annual ratio -	1,349	3,727	2,763

Hence each man has been on the sick report, on an average, once in every four and a third months.

FORT JESUP.

LATITUDE 31° 30′ N., LONGITUDE 93° 47′ W.

This post is situated on the ridge dividing the waters of the Red and Sabine rivers, being distant from each about twenty-five miles. On the northern side of the ridge the streams empty into Red river, mostly through Spanish lake, the nearest point of which is about twelve miles from the fort. On the opposite side, the waters are conveyed directly into the Sabine. The post is about 100 miles due north from the Gulf of Mexico. It was established in 1822.

The aspect of the country on either side of the ridge is rolling and broken. Along the margins of streams some good lands are found, being a black clayey soil of a tenacious nature. The high lands are covered chiefly with pine, thinly intermixed with oak and hickory; whilst the streams are skirted with beach, mulberry, sassafras, and occasionally cypress.

The summer usually commences about the 1st of May, and continues until the last of September; during which period a high temperature, from ten o'clock until sun-set, generally prevails, the range of the thermometer being from 76° to 90° and 96° of fahrenheit. The nights, however, are often cool and pleasant, owing to the refreshing breezes which come in the direction of the Gulf of Mexico. What is called the rainy season begins generally in the month of February, and continues until the first or middle of May. The annual quantity of rain, on an average of four years, is 47.43 inches.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Jesup, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	150	223	160	277	258	268	261	269	188	227	2281	145	126	201	331	250	327	309	97	295	218	2299
Intermittent fever - -	4	4	2	13	5	2	4	9	7	10	60	4	5	8	21	5	8	6	20	6	22	105
Remittent " - -	-	-	-	5	2	5	1	-	-	-	13	-	7	4	5	-	2	9	-	-	-	27
Synochal " - -	-	-	-	2	-	-	-	-	-	-	2	-	3	-	-	-	-	18	-	-	-	21
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	2	-	-	-	9
Diseases of the respiratory organs - - -	53	20	55	140	30	26	60	38	25	28	475	30	13	12	56	17	53	45	26	35	21	308
Diseases of the digestive organs - - -	38	57	10	31	19	82	22	8	19	49	335	17	34	91	232	72	83	159	41	76	65	870
Diseases of the brain and nervous system - -	2	-	-	-	-	-	1	3	11	9	26	-	-	-	3	-	18	1	4	4	4	34
Dropsies - - -	-	-	-	1	-	1	1	2	1	-	6	-	-	1	2	-	1	-	-	-	-	4
Rheumatic affections -	2	5	-	54	15	10	4	18	3	11	122	3	2	2	42	9	23	12	17	7	9	126
Venereal " - -	-	6	5	3	-	1	2	1	-	3	21	4	3	6	9	-	3	4	2	-	1	32
Ulcers and abscesses -	-	2	-	5	2	-	-	4	3	16	32	-	1	-	33	4	8	40	2	13	11	112
Wounds and injuries -	10	3	3	13	30	19	40	11	21	43	193	6	11	9	57	27	60	14	11	38	30	263
Ebriety - - -	-	10	-	-	-	-	2	13	17	16	58	-	7	-	-	-	-	-	4	11	17	39
All other diseases - -	2	1	4	85	6	7	9	21	12	12	159	2	2	14	65	20	21	14	3	21	6	168
Total - - -	111	108	79	352	109	153	148	128	119	197	1502	66	88	147	525	154	287	324	130	211	186	2118

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	218	161	178	310	246	306	318	93	247	214	2291	183	137	216	278	241	271	295	278	230	201	2330
Intermittent fever - -	28	15	5	35	7	10	132	7	14	30	283	8	3	28	8	4	5	7	15	14	12	104
Remittent fever - -	18	30	20	1	2	12	-	1	2	-	86	16	-	4	-	2	2	-	4	-	-	28
Synochal fever - -	-	2	4	-	3	-	-	-	-	-	9	4	-	-	-	-	-	-	-	-	-	4
Typhus fever - - -	-	-	-	1	-	8	-	-	-	-	9	-	-	-	-	1	-	-	-	-	1	2
Diseases of the respiratory organs - - -	16	-	17	50	20	16	21	19	8	7	174	43	9	19	21	34	24	39	26	14	8	237
Diseases of the digestive organs - - -	38	16	24	152	73	78	101	21	56	65	624	10	13	21	32	25	55	80	48	38	13	335
Diseases of the brain and nervous system - -	1	1	-	5	3	15	16	2	7	14	64	-	-	-	1	-	4	21	17	-	6	49
Dropsies - - -	-	-	-	-	-	-	1	-	2	-	3	-	-	-	-	-	1	-	-	1	-	2
Rheumatic affections -	1	1	4	30	18	11	9	3	4	12	93	-	-	44	5	4	6	9	8	7	3	86
Venereal affections -	8	6	8	1	-	-	1	-	-	-	34	5	1	2	-	-	-	5	1	2	-	16
Ulcers and abscesses -	-	3	3	31	9	8	31	7	13	16	121	4	-	1	6	1	3	10	11	11	10	57
Wounds and injuries -	25	14	11	88	20	56	18	12	24	33	301	7	10	37	37	26	29	25	30	12	13	226
Ebriety - - -	-	22	-	-	-	-	9	6	6	29	72	1	5	-	-	-	5	8	12	9	11	51
All other diseases - -	-	1	-	42	3	7	14	6	35	14	122	-	-	54	22	5	-	11	11	28	2	133
Total - - -	145	111	96	436	158	221	353	84	171	220	1995	98	41	210	132	102	134	215	183	136	79	1330

Under the class of diseases of the respiratory organs are comprised 994 catarrh, 32 pneumonia, 143 pleuritis, and 19 phthisis pulmonalis; under the head of digestive organs, 1,392 diarrhœa and dysentery, 246 cholic and cholera, and 8 hepatitis; under the class of brain and nervous system, 8 epilepsy, 74 mania a potu, 2 apoplexy, and 5 nyctalopia; and under that of venereal affections, 74 gonorrhœa and 29 syphilis.

As the total of deaths, according to the post returns, is 70, and the aggregate mean strength is 2,306, the annual ratio of mortality is 3 per cent. Of the deaths, all are reported in the medical returns, viz. one remittent fever, two typhus fever, twelve phthisis pulmonalis, eight pneumonia, three hydro-thorax, one ascites, nine gastro-enteritis, two dysentery, six chronic diarrhœa, one hepatitis, three epidemic cholera, seven mania a potu, six ebriety, two apoplexy from ebriety, one casualty, two sudden, and four from causes not specified.

It is a remarkable fact that among 70 deaths three only are reported from fevers. The annual average of fevers of malarial origin is low for this region, intermittents being 24, and remittents 7 per cent. The third quarter of 1835 is the only season in which a high ratio of intermitting fever is presented, being at the rate of 41 per cent. for the quarter. "Intermittents," says Surgeon P. H. Craig, "have prevailed to a greater extent than I have ever known before, and many of the cases were characterized by great obstinacy. Few of the families escaped the disease; but I report the cases only that occurred among the officers and soldiers. The sudden atmospheric vicissitudes in the months of June, July, and August, may be assigned as the probable cause of its unusual prevalence." It is a singular fact that, notwithstanding the peculiar rifeness of intermitting fever, not a single case of the remitting form is reported.

In regard to the treatment of diseases, it is remarked by Surgeon Craig, that morbid action is generally of a character requiring antiphlogistic means in the early stages, such as bleeding, both general and local, and the exhibition of mild purgatives.

The following abstract exhibits the relative agency of the seasons in the causation of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated annually.
10 first quarters -	2,281	1,502	659
10 second " -	2,299	2,118	921
10 third " -	2,291	1,995	871
10 fourth " -	2,330	1,330	571
Annual ratio -	2,300	6,945	3,020

Every man, on average, has consequently been reported sick once in every four months.

The following table presents the mortality of each post and its relative degree of sickness, based on the statistics furnished during the period of ten years—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's return.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Jefferson Barracks -	3,193	135	111	10,965	3,434
Fort Gibson - -	4,064	259	180	16,487	4,057
Forts Smith and Coffee -	294	20	11	906	3,872
Fort Towson - -	1,349	47	26	3,727	2,763
" Jesup - - -	2,300	67	66	6,945	3,020
Aggregate - -	11,140	528	394	39,030	-
Ratio per 1,000 -	-	45*	36	-	3,504

The annual ratio of mortality, according to the medical reports, is $3\frac{6}{10}$ per cent., and according to the Adjutant General's returns, $4\frac{5}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (24 at Jefferson Barracks, 18 at Fort Gibson, and 3 at Fort Jesup) have been excluded in both these calculations; and in the medical returns, those deaths also reported as drowned, frozen, and suicide. As the ratio per 1,000 of mean strength annually under treatment is 3,504, it follows that every man, on an average, was reported sick once in nearly every $3\frac{1}{2}$ months. Judging from the ratio under treatment annually as affording an index of the comparative salubrity of the several posts composing this class, it is found that Fort Gibson exhibits the highest, and Fort Towson the lowest, extreme. The ratio under treatment annually in this class is the highest yet presented.

The general results obtained from this class of posts will now be exhibited, in further illustration of the diseases of this region, showing the relation of season and climate with morbid action.

* The aggregate mean strength, according to the Adjutant General's returns, is 11,789.

TABLE exhibiting the relative influence of the

DISEASES.	Jefferson Barracks.	Fort Gibson.	Forts Smith & Coffee.	Fort Towson.	Fort Jesup.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.								
First quarter	94	599	48	278	60	1079	10611	101
Second "	183	804	31	254	105	1377	10670	129
Third "	582	1990	120	638	283	3613	11847	305
Fourth "	233	1493	51	374	104	2255	11428	197
Annual ratio	1092	4886	250	1544	552	8324	11140	732
REMITTENT FEVER.								
First quarter	47	47	–	19	13	126	10611	12
Second "	49	70	1	53	27	200	10674	19
Third "	292	671	26	162	86	1237	11847	104
Fourth "	137	228	5	40	28	438	11428	38
Annual ratio	525	1016	32	274	154	2001	11140	178
SYNOCHAL FEVER.								
First quarter	–	11	1	4	2	18	10611	2
Second "	7	2	1	10	21	41	10674	4
Third "	1	89	25	37	9	161	11847	14
Fourth "	–	46	–	4	4	54	11428	5
Annual ratio	8	148	27	55	36	274	11140	25
TYPHUS FEVER.								
First quarter	–	2	–	–	–	2	10611	0 2-10
Second "	–	–	–	3	9	12	10674	1
Third "	1	2	–	4	9	16	11847	1 4-10
Fourth "	–	1	–	12	2	15	11428	1 3-10
Annual ratio	1	5	–	19	20	45	11140	3 9-10
DIARRHŒA AND DYSENTERY.								
First quarter	200	210	11	18	219	658	10611	62
Second "	697	588	8	56	619	1968	10674	185
Third "	1232	864	51	126	372	2645	11847	223
Fourth "	515	574	27	87	182	1385	11428	121
Annual ratio	2644	2236	97	287	1392	6656	11140	591

seasons in the production of morbid action, &c.

DISEASES.	Jefferson Barracks.	Fort Gibson.	Forts Smith & Coffee.	Fort Towson.	Fort Jesup.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.								
First quarter	296	506	29	40	426	1297	10611	122
Second "	116	251	2	30	250	649	10674	61
Third "	117	73	25	38	139	392	11847	33
Fourth "	384	276	13	42	179	894	11428	78
Annual ratio	913	1106	69	150	994	3232	11140	294
PNEUMONIA.								
First quarter	41	182	–	22	15	260	10611	25
Second "	8	33	2	7	7	57	10674	5
Third "	12	16	2	1	4	35	11847	3
Fourth "	25	28	2	17	6	78	11428	7
Annual ratio	86	259	6	47	32	430	11140	40
PLEURITIS.								
First quarter	86	102	2	7	28	225	10611	21
Second "	33	39	1	12	45	130	10674	12
Third "	38	19	–	7	20	84	11847	7
Fourth "	54	38	1	10	50	153	11428	13
Annual ratio	211	198	4	36	143	592	11140	53
PHTHISIS PULMONALIS.								
First quarter	7	12	1	3	5	28	10611	3
Second "	10	7	–	6	6	29	10674	3
Third "	20	16	–	2	6	44	11847	4
Fourth "	12	7	–	2	2	23	11428	2
Annual ratio	49	42	1	13	19	124	11140	12
RHEUMATISM.								
First quarter	62	139	14	45	122	382	10611	36
Second "	61	96	7	44	126	334	10674	31
Third "	25	78	6	29	93	231	11847	20
Fourth "	81	85	7	47	86	306	11428	27
Annual ratio	229	398	34	165	427	1253	11140	114

As this class of posts maintains the same climatic relation towards the preceding one, as the third class of the northern division does towards the first two, so a similar relation is found in regard to pulmonary diseases. Embracing a region remote from the influence of large bodies of water, the ratios of catarrhal affections, pleuritis, and pneumonia, in this, compared with those of the preceding class, are higher, notwithstanding the more southern locality of the interior stations. The two classes of the middle division stand thus—

	Catarrh and influenza.	Pneumonia.	Pleuritis.
Sea-coast	271	25	32
Interior	290	39	52

In the system of climate now under investigation, the comparative agency of the seasons in the causation of pulmonary diseases is more strikingly contrasted than in any other. In catarrh and influenza, the ratios of the first and third quarters stand as 122 to 33, in pneumonia as 25 to 3, and in pleuritis as 21 to 7.

In regard to the comparative influence of the seasons in the production of rheumatic affections, this class is found to exhibit it also more decidedly than any other; but the general consideration of this subject will be reserved until the investigation of each class of posts shall have been completed.

In the last class, a comparison was made with the mean results given in the three classes of the northern division of the United States, showing that the ratios of intermittent and remittent fever, as well as diarrhœa and dysentery, increase in proportion as more southern latitudes are reached. The class of stations just described occupies nearly the same latitudes as those constituting the preceding class; but the average of diseases of malarial origin is higher, owing doubtless, in some measure, to the circumstance that as the region is inland the heats of summer are greater. Compared with this class, it is found that the annual ratio of intermittent fever is twice as high, and that of diarrhœa and dysentery is about one-third greater; whilst the ratios of remittent, synochal, and typhus fever, present little difference.

The total of deaths in each month, according to the post returns, is exhibited in the annexed table—

TABLE showing the number of deaths in each month.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Total of deaths in each month.	41	34	35	19	28	46	56	66	88	72	57	31	573

In this table are included 45 deaths from epidemic cholera. Of these, three occurred in January, eight in May, three in June, nine in July, ten in August, and twelve in September.

This region is characterized by the predominance of high temperature. As we proceed south from Canada, to Florida, it is found that the contrast in the seasons grow less in proportion as the mean annual temperature increases. The peculiar character of the climate of our most southern latitudes is distinguished less by the mean annual temperature, than in the manner of its distribution throughout the year. At Fort Snelling, the mean winter temperature is 17° 29′, and that of summer is 72° 80′; and in Florida, on the other hand, the former, at Fort Brooke and Key West, is respectively 65° 02′ and 70° 05′, and the latter, 81° 04′ and 81° 39′. Thus, whilst the difference between the mean temperature of summer and winter, at Fort Snelling, is 55° 51′, at Fort Brooke it is 16° 02′, and at Key West only 11° 34′; and whilst the winter at Fort Snelling is 52° 76′ colder than at Key West, the summer of the latter is only 8° 59′ warmer. We thus perceive the truth of the remark made by Humboldt, that the climate of the tropics is characterized much more by the duration of heat than its intensity. The remarkable uniformity of the seasons observed in the peninsula of East Florida is, however, much less striking as we proceed into Georgia. At Augusta Arsenal, for example, notwithstanding the mean annual temperature is nearly 8° lower than at Fort Brooke, the mean summer temperature is higher. In summer, the mercury rises higher in most parts of the United States, and even in Canada, than it does along the coast of Florida. In six years' observation at Key West, it was never known to rise above 90°. In peninsular Florida, vegetation is continuous; wild flowers never cease to unfold their petals; and the temperature of the waters of rivers and bays will generally admit of bathing throughout the winter.

The first class comprises the following posts:—Augusta Arsenal, Fort Mitchell, Baton Rouge, New Orleans, and Forts Pike, Wood, and Jackson; and the second class embraces all the stations of East Florida. In the former, Augusta Arsenal and Fort Mitchell are included, in default of a better arrangement.

FIRST CLASS.

AUGUSTA ARSENAL.

LATITUDE 33° 28′ N., LONGITUDE 81° 53′ W.

The class of posts to be now described are eight in number, viz: Augusta Arsenal, Ga., Fort Mitchell, Ala., and six posts on the lower Mississippi, La., to wit: Forts Pike, Wood, St. Philip, and Jackson, and the posts at New Orleans and Baton Rouge.

Augusta Arsenal, situated about three miles from the city of Augusta, occupies a high and dry position among the "sand-hills." It is distant about 130 miles from the ocean, and is elevated, it is estimated, 600 feet above its level. The nearest point of the Savannah river is 2 miles, whilst the surrounding country presents no marshes or lakes. The

locality of this station has an elevation of about 200 feet above that of Augusta; and as the soil is hard, dry, and sandy, and the physical aspect of the neighboring country exhibits a succession of hills and sloping valleys, the most favorable natural circumstances obtain to facilitate drainage. The soil is rather unproductive. Culinary vegetables are very inferior in size and quality. Some varieties of fruit, however, such as the apple, plum, peach, and watermelon, are very abundant, attain a large growth, and are finely flavored. The forest trees consist chiefly of different species of the genus *quercus*, *pinus*, *carya*, *juglans*, and *diospyros*.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Augusta Arsenal, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1830	1831	1832	1833	1834	1835	1836	1837	1838		
Mean Strength - -	59	63	51	62	232	90	68	40	-	-	609	47	68	88	55	58	88	60	-	-	-	488
Intermittent fever - -	1	7	1	2	2	-	-	-	-	-	13	2	4	8	-	7	8	-	-	-	-	31
Remittent fever - -	3	-	4	1	2	-	1	-	-	-	11	10	6	6	7	7	8					
Synochal fever - -	5	-	-	1	-	-	-	-	-	-	6	-	-	-	8	-	8	-				4
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-
Diseases of the respiratory organs - - -	3	3	2	6	42	1	10	1	-	-	69	1	-	2	8	6	8	6				60
Diseases of the digestive organs - - -	2	1	3	7	71	2	2	2	-	-	90	14	19	6	6	2	6	6				44
Diseases of the brain and nervous system - -	-	1	-	-	1	-	1	1	-	-	4	2	2	2	-	1	-	-				7
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-
Rheumatic affections -	2	2	-	7	7	1	1	-	-	-	20	6	-	2	1	-	-	4				16
Venereal affections -	2	1	2	2	14	1	1	-	-	-	23	1	-	2	1	2	-	-				7
Ulcers and abscesses -	-	2	3	2	2	-	-	-	-	-	9	1	1	1	1	-	-	1				5
Wounds and injuries -	2	5	1	6	12	1	4	2	-	-	33	2	2	4	2	1	2	2				16
Elotety - -	2	-	-	6	1	1	-	-	-	-	11	-	2	-	-	-	1					3
All other diseases -	4	5	5	2	19	2	-	10	-	-	47	6	6	1	1	2	4	2				22
Total - - -	24	27	22	42	115	10	20	16	-	-	326	50	42	37	24	20	29	21	-	-		219

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Jesup, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	150	223	160	277	258	268	261	269	188	227	2281	145	126	201	331	250	327	309	97	295	218	2299
Intermittent fever - -	4	4	2	13	5	2	4	9	7	10	60	4	5	8	21	5	8	6	20	6	22	105
Remittent " - -	-	-	-	5	2	5	1	-	-	-	13	-	7	4	5	-	2	9	-	-	-	27
Synochal " - -	-	-	-	2	-	-	-	-	-	-	2	-	3	-	-	-	-	18	-	-	-	21
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	2	-	-	-	9
Diseases of the respiratory organs - - -	53	20	55	140	30	26	60	38	25	28	475	30	13	12	56	17	53	45	26	35	21	308
Diseases of the digestive organs - - -	38	57	10	31	19	82	22	8	19	49	335	17	34	91	232	72	83	159	41	76	65	870
Diseases of the brain and nervous system - -	2	-	-	-	-	-	1	3	11	9	26	-	-	-	3	-	18	1	4	4	4	34
Dropsies - - -	-	-	-	1	-	1	1	2	1	-	6	-	-	1	2	-	1	-	-	-	-	4
Rheumatic affections -	2	5	-	54	15	10	4	18	3	11	122	3	2	2	42	9	23	12	17	7	9	126
Venereal " - -	-	6	5	3	-	1	2	1	-	3	21	4	3	6	9	-	3	4	2	-	1	32
Ulcers and abscesses -	-	2	-	5	2	-	-	4	3	16	32	-	1	-	33	4	8	40	2	13	11	112
Wounds and injuries -	10	3	3	13	30	19	40	11	21	43	193	6	11	9	57	27	60	14	11	38	30	263
Ebriety - - -	-	10	-	-	-	-	2	13	17	16	58	-	7	-	-	-	-	-	4	11	17	39
All other diseases - -	2	1	4	85	6	7	9	21	12	12	159	2	2	14	65	20	21	14	3	21	6	168
Total - - -	111	108	79	352	109	153	146	128	119	197	1502	66	88	147	525	154	287	324	130	211	186	2118

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	218	161	178	310	246	306	318	93	247	214	2291	188	137	216	278	241	271	295	278	230	201	2390
Intermittent fever - -	28	15	5	35	7	10	132	7	14	30	283	8	3	28	8	4	5	7	15	14	12	104
Remittent fever - -	18	30	20	1	2	12	-	1	2	-	86	16	-	4	-	2	2	-	4	-	-	28
Synochal fever - -	-	2	4	-	3	-	-	-	-	-	9	4	-	-	-	-	-	-	-	-	-	4
Typhus fever - -	-	-	-	1	-	8	-	-	-	-	9	-	-	-	-	1	-	-	-	-	1	2
Diseases of the respiratory organs - - -	16	-	17	50	20	16	21	19	8	7	174	43	9	19	21	34	24	39	26	14	8	237
Diseases of the digestive organs - - -	38	16	24	152	73	78	101	21	56	65	624	10	13	21	32	25	55	80	48	38	13	335
Diseases of the brain and nervous system - -	1	1	-	5	3	15	16	2	7	14	64	-	-	-	1	-	4	21	17	-	6	49
Dropsies - - -	-	-	-	-	-	-	1	-	2	-	3	-	-	-	-	-	1	-	-	1	-	2
Rheumatic affections -	1	1	4	30	18	11	9	3	4	12	93	-	-	44	5	4	6	9	8	7	3	86
Venereal affections -	8	6	8	1	-	-	1	-	-	-	34	5	1	2	-	-	-	5	1	2	-	16
Ulcers and abscesses -	-	3	3	31	9	8	31	7	13	16	121	4	-	1	6	1	3	10	11	11	10	57
Wounds and injuries -	25	14	11	88	20	56	18	12	24	33	301	7	10	37	37	26	29	25	30	12	13	226
Ebriety - - - -	-	22	-	-	-	-	9	6	6	29	72	1	5	-	-	-	5	8	12	9	11	51
All other diseases - -	-	1	-	42	3	7	14	6	35	14	122	-	-	54	22	5	-	11	11	28	2	133
Total - - -	145	111	96	436	158	221	353	84	171	220	1995	98	41	210	132	102	134	215	183	136	79	1330

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Jesup, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	150	223	160	277	258	268	261	269	188	227	2281	145	126	201	331	250	327	309	97	295	218	2299
Intermittent fever - -	4	4	2	13	5	2	4	9	7	10	60	4	5	8	21	5	8	6	20	6	22	105
Remittent " - -	-	-	-	5	2	5	1	-	-	-	13	-	7	4	5	-	2	9	-	-	-	27
Synochal " - -	-	-	-	2	-	-	-	-	-	-	2	-	3	-	-	-	-	18	-	-	-	21
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	2	-	-	-	9
Diseases of the respiratory organs - - -	53	20	55	140	30	26	60	38	25	28	475	30	13	12	56	17	53	45	26	35	21	308
Diseases of the digestive organs - - -	38	57	10	31	19	82	22	8	19	49	335	17	34	91	232	72	83	159	41	76	65	870
Diseases of the brain and nervous system - -	2	-	-	-	-	-	1	3	11	9	26	-	-	-	3	-	18	1	4	4	4	34
Dropsies - - -	-	-	-	1	-	1	1	2	1	-	6	-	-	1	2	-	1	-	-	-	-	4
Rheumatic affections -	2	5	-	54	15	10	4	18	3	11	122	3	2	2	42	9	23	12	17	7	9	126
Venereal " - -	-	6	5	3	-	1	2	1	-	3	21	4	3	6	9	-	3	4	2	-	1	32
Ulcers and abscesses -	-	2	-	5	2	-	-	4	3	16	32	-	1	-	33	4	8	40	2	13	11	112
Wounds and injuries -	10	3	3	13	30	19	40	11	21	43	193	6	11	9	57	27	60	14	11	38	30	263
Ebriety - - -	-	10	-	-	-	-	2	13	17	16	58	-	7	-	-	-	-	-	4	11	17	39
All other diseases - -	2	1	4	85	6	7	9	21	12	12	159	2	2	14	65	20	21	14	3	21	6	168
Total - - -	111	108	79	352	109	153	146	128	119	197	1502	66	88	147	525	154	287	324	130	211	186	2118

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	218	161	178	310	246	306	318	93	247	214	2291	188	137	216	278	241	271	295	279	230	201	2330
Intermittent fever - -	28	15	5	35	7	10	132	7	14	30	283	8	3	28	8	4	5	7	15	14	12	104
Remittent fever - -	18	30	20	1	2	12	-	1	2	-	86	16	-	4	-	2	2	-	4	-	-	28
Synochal fever - -	-	2	4	-	3	-	-	-	-	-	9	4	-	-	-	-	-	-	-	-	-	4
Typhus fever - - -	-	-	-	1	-	8	-	-	-	-	9	-	-	-	-	1	-	-	-	1	2	
Diseases of the respiratory organs - - -	16	-	17	50	20	16	21	19	8	7	174	43	9	19	21	34	24	39	26	14	8	237
Diseases of the digestive organs - - -	38	16	24	152	73	78	101	21	56	65	624	10	13	21	32	25	55	80	48	38	13	335
Diseases of the brain and nervous system - -	1	1	-	5	3	15	16	2	7	14	64	-	-	-	1	-	4	21	17	-	6	49
Dropsies - - -	-	-	-	-	-	-	1	-	2	-	3	-	-	-	-	-	1	-	-	1	-	2
Rheumatic affections -	1	1	4	30	18	11	9	3	4	12	93	-	-	44	5	4	6	9	8	7	3	86
Venereal affections -	8	6	8	1	-	-	1	-	-	-	34	5	1	2	-	-	-	5	1	2	-	16
Ulcers and abscesses -	-	3	3	31	9	8	31	7	13	16	121	4	-	1	6	1	3	10	11	11	10	57
Wounds and injuries -	25	14	11	88	20	56	18	12	24	33	301	7	10	37	37	26	29	25	30	12	13	226
Ebriety - - -	-	22	-	-	-	-	9	6	6	29	72	1	5	-	-	-	5	8	12	9	11	51
All other diseases - -	-	1	-	42	3	7	14	6	35	14	122	-	-	54	22	5	-	11	11	28	2	133
Total - - -	145	111	96	436	158	221	353	84	171	220	1995	98	41	210	132	102	134	215	183	136	79	1330

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Jesup, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	150	223	160	277	258	268	261	269	188	227	2281	145	126	201	331	250	327	309	97	295	218	2299
Intermittent fever - -	4	4	2	13	5	2	4	9	7	10	60	4	5	8	21	5	8	6	20	6	22	105
Remittent " - -	-	-	-	5	2	5	1	-	-	-	13	-	7	4	5	-	2	9	-	-	-	27
Synochal " - -	-	-	-	2	-	-	-	-	-	-	2	-	3	-	-	-	-	18	-	-	-	21
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	2	-	-	-	9
Diseases of the respiratory organs - - -	53	20	55	140	30	26	60	38	25	28	475	30	13	12	56	17	53	45	26	35	21	308
Diseases of the digestive organs - - -	38	57	10	31	19	82	22	8	19	49	335	17	34	91	232	72	83	159	41	76	65	870
Diseases of the brain and nervous system - -	2	-	-	-	-	-	1	3	11	9	26	-	-	-	3	-	18	1	4	4	4	34
Dropsies - - -	-	-	-	1	-	1	1	2	1	-	6	-	-	1	2	-	1	-	-	-	-	4
Rheumatic affections -	2	5	-	54	15	10	4	18	3	11	122	3	2	2	42	9	23	12	17	7	9	126
Venereal " - -	-	6	5	3	-	1	2	1	-	3	21	4	3	6	9	-	3	4	2	-	1	32
Ulcers and abscesses -	-	2	-	5	2	-	-	4	3	16	32	-	1	-	33	4	8	40	2	13	11	112
Wounds and injuries -	10	3	3	13	30	19	40	11	21	43	193	6	11	9	57	27	60	14	11	38	30	263
Ebriety - - -	-	10	-	-	-	-	2	13	17	16	58	-	7	-	-	-	-	-	4	11	17	39
All other diseases - -	2	1	4	85	6	7	9	21	12	12	159	2	2	14	65	20	21	14	3	21	6	168
Total - - -	111	108	79	352	109	153	146	128	119	197	1502	66	88	147	525	154	287	324	130	211	186	2118

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	218	161	178	310	246	306	318	93	247	214	2291	183	137	216	278	241	271	295	278	230	201	2330
Intermittent fever - -	28	15	5	35	7	10	132	7	14	30	283	8	3	28	8	4	5	7	15	14	12	104
Remittent fever - -	18	30	20	1	2	12	-	1	2	-	86	16	-	4	-	2	2	-	4	-	-	28
Synochal fever - -	-	2	4	-	3	-	-	-	-	-	9	4	-	-	-	-	-	-	-	-	-	4
Typhus fever - - -	-	-	-	1	-	8	-	-	-	-	9	-	-	-	-	1	-	-	-	-	1	2
Diseases of the respiratory organs - - -	16	-	17	50	20	16	21	19	8	7	174	43	9	19	21	34	24	39	26	14	8	237
Diseases of the digestive organs - - -	38	16	24	152	73	78	101	21	56	65	624	10	13	21	32	25	55	80	48	38	13	335
Diseases of the brain and nervous system - -	1	1	-	5	3	15	16	2	7	14	64	-	-	-	1	-	4	21	17	-	6	49
Dropsies - - -	-	-	-	-	-	-	1	-	2	-	3	-	-	-	-	-	1	-	-	1	-	2
Rheumatic affections -	1	1	4	30	18	11	9	3	4	12	93	-	-	44	5	4	6	9	8	7	3	86
Venereal affections -	8	6	8	1	-	-	1	-	-	-	34	5	1	2	-	-	-	5	1	2	-	16
Ulcers and abscesses -	-	3	3	31	9	8	31	7	13	16	121	4	-	1	6	1	3	10	11	11	10	57
Wounds and injuries -	25	14	11	88	20	56	18	12	24	33	301	7	10	37	37	26	29	25	30	12	13	226
Ebriety - - -	-	22	-	-	-	-	9	6	6	29	72	1	5	-	-	-	5	8	12	9	11	51
All other diseases - -	-	1	-	42	3	7	14	6	35	14	122	-	-	54	22	5	-	11	11	28	2	133
Total - - -	145	111	96	436	158	221	353	84	171	220	1995	98	41	210	132	102	134	215	183	136	79	1330

bayou, which empties into the Mississippi about 200 yards above the barracks. "This bayou," says Surgeon B. F. Harney, "is filled to a greater or less extent from the river, from the 1st of February to the 1st of August, of each year. It might be supposed that, as the water retires from the bayou, deposites of a nature productive of disease would take place. But experience has proven the reverse; for, as soon as the annual fall of the Mississippi commences, the 'rainy season' begins; and thus the bayou is thoroughly washed, and the deposites that might prove a source of disease are carried to the river. It also lies in a direction whence we have no winds during the sickly season."

The public grounds are undulating and well drained. The country on the same side of the river, extending north and east, is of the same character; but that lying south, together with the lands west of the Mississippi, consists of a rich alluvial deposite, low and level.

The barracks, constructed of brick, with slate roofs, were completed in 1824. The hospital, built of the same materials, was finished in 1839. These buildings are well constructed and admirably adapted for the purposes intended. The public grounds are now well shaded by trees, such as the mulberry, pride of China, &c. These trees, planted in 1824, contribute, it is believed, very materially towards maintaining the healthfulness of the station.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Baton Rouge, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	170	149	207	152	125	166	150	-	-	-	1119	124	204	251	156	115	121	152	-	-	-	1123
Intermittent fever -	14	3	20	13	6	10	14	-	-	-	80	15	10	36	34	7	15	22	-	-	-	139
Remittent " - -	-	3	-	-	15	15	12	-	-	-	45	2	3	23	-	15	12	15	-	-	-	70
Synochal " - -	-	3	-	-	-	-	-	-	-	-	3	-	5	-	-	-	-	-	-	-	-	5
Typhus " - -	3	-	1	-	-	-	-	-	-	-	4	1	10	5	-	3	-	-	-	-	-	19
Diseases of the respiratory organs - -	9	12	39	3	6	22	13	-	-	-	104	5	5	16	6	4	11	6	-	-	-	53
Diseases of the digestive organs - - -	26	41	51	24	40	35	37	No permanent command.	-	-	254	17	57	81	23	69	59	53	-	-	-	359
Diseases of the brain and nervous system -	-	5	3	1	2	3	4		-	-	18	-	1	-	2	1	1	5	-	-	-	10
Dropsies - - -	1	-	-	-	1	-	-		-	-	2	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	3	2	-	2	6	8	7		-	-	28	-	-	-	-	2	4	-	-	-	-	7
Venereal " - -	3	-	4	1	1	3	4		-	-	16	-	2	14	2	-	-	6	-	-	-	24
Ulcers and abscesses -	6	3	8	4	4	6	6		-	-	37	3	3	4	4	8	4	4	-	-	-	30
Wounds and injuries -	13	5	12	9	12	11	9		-	-	71	10	5	18	12	13	16	9	-	-	-	83
Ebriety - - -	-	42	9	4	3	-	-		-	-	58	5	9	5	4	5	-	-	-	-	-	28
All other diseases -	5	4	47	37	5	43	15		-	-	156	1	24	65	50	22	34	13	-	-	-	209
Total - - -	83	123	194	98	101	156	121	-	-	-	876	59	134	267	137	150	156	133	-	-	-	1036

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	141	185	150	55	148	120	144	-	-	-	943	95	196	151	173	160	125	127	-	-	-	1027
Intermittent fever - -	29	9	27	50	53	20	20	-	-	-	208	17	19	7	20	24	12	11	-	-	-	110
Remittent fever - -	8	3	13	10	28	15	18	-	-	-	95	19	12	9	15	16	17	12	-	-	-	100
Synochal fever - -	-	5	-	-	-	-	-	-	-	-	5	4	-	-	4	-	-	-	-	-	-	8
Typhus fever - -	-	7	-	-	-	-	-	-	-	-	7	-	5	-	-	-	-	-	-	-	-	5
Diseases of the respiratory organs - - -	3	-	2	-	18	15	11	-	-	-	49	-	21	23	15	13	6	6	-	-	-	84
Diseases of the digestive organs - - -	18	22	64	14	53	48	53	-	-	-	272	-	17	28	20	52	37	18	-	-	-	172
Diseases of the brain and nervous system - -	-	1	-	-	3	-	-	-	-	-	4	-	1	1	3	4	1	-	-	-	-	10
Dropsies - - -	-	-	-	-	2	-	-	-	-	-	2	1	-	-	1	2	-	-	-	-	-	4
Rheumatic affections -	1	3	-	1	4	8	5	-	-	-	22	-	-	-	4	10	8	2	-	-	-	24
Venereal " - -	-	-	2	1	-	4	3	-	-	-	10	-	1	-	3	2	2	1	-	-	-	9
Ulcers and abscesses -	5	-	-	2	10	7	12	-	-	-	36	7	-	8	-	3	4	4	-	-	-	26
Wounds and injuries -	3	7	11	4	7	10	12	-	-	-	54	8	13	9	7	12	6	3	-	-	-	58
Ebriety - - -	-	13	1	2	-	-	-	-	-	-	16	3	-	4	-	-	-	-	-	-	-	7
All other diseases - -	7	18	10	16	40	24	16	-	-	-	131	10	22	33	51	12	8	8	-	-	-	144
Total - - -	74	88	130	100	218	151	150	-	-	-	911	69	111	122	143	150	101	65	-	-	-	761

Under the class of diseases of the respiratory organs are comprised 220 catarrh, 24 pneumonia, 33 pleuritis, and 11 phthisis pulmonalis; under the head of digestive organs, 516 diarrhœa and dysentery, 423 cholic and cholera, and 7 hepatitis; under the class of brain and nervous system, 10 epilepsy, 13 mania a potu, and 1 apoplexy; and under that of venereal affections, 36 gonorrhœa, and 21 syphilis.

As the total of deaths, according to the post returns, is 79, and the aggregate mean strength is 1,090, the annual ratio of mortality is $7\frac{4}{11}$ per cent. Of the deaths, 73 are reported in the medical returns, viz: 12 congestive typhus, 10 yellow fever, 1 remittent fever, 1 intermittent fever, 1 pneumonia, 1 pleuritis, 1 phthisis pulmonalis, 5 dysentery, 3 gastro-enteritis, 8 epidemic cholera, 1 erysipelas, 1 delirium tremens, 7 ebriety, 1 epilepsy, 1 chronic visceral lesions, and 19 from causes not specified. Excluding the cases of cholera, the average mortality, according to the medical returns, is $6\frac{2}{11}$ per cent.

The average of intermittent fever is 51, and that of remittent fever is 30 per cent. Although the ratio is not so high, for example, as that of Fort Gibson, yet the mortality from fevers of malarial origin, owing to the circumstance that remittents often assume the most malignant character, is considerably higher.

The following extract from the quarterly report, made the 31st of December, 1829, by Surgeon B. F. Harney, will afford some explanation in reference to the high mortality by which this post has always been distinguished—"Adams, of 'E' company, and Lado and Small, of 'K' company, died of intemperance, their constitutions having been destroyed thereby. Stettler, of 'E' company, a deserter and unacclimated, died of remittent fever—had chronic dysentery for several months previous to his death. Banta, a recruit of the 4th Infantry, unacclimated and a prisoner, died of yellow fever. Gaffield and Smith, of 'E' company, on guard and much exposed, the latter unacclimated, died of yellow fever. Thompson, a deserter, with bad constitution, of yellow fever. Salem, of 'B' company, of very intemperate habits, arrived here from Fort St. Philip with yellow fever; he recovered, became affected with intermittent fever, and finally died of a second attack of yellow fever. Partridge, of 'E' company, very intemperate, of remittent fever. Seven men, sent in pursuit of deserters, were, with the exception of the corporal, taken sick soon after their return, and two of these died of yellow fever."

In the second quarter of 1833, eight deaths from epidemic cholera are reported. This point seems to have wholly escaped the dreadful ravages of this disease in the preceding year.

Prior to 1829, more especially from 1819 to 1824 inclusive, this post presents a melancholy history. The annual ratio of mortality, based on the results of six years, (from 1819 to 1824 inclusive,) is nearly 21 per cent.—a fatality unparalleled in our military annals. In 1822, the most fatal year, the mean was almost 26 per cent.

In a recent report on the medical topography of this post, Surgeon Harney remarks—"The diseases are mostly bilious intermittents and remittents, tending to a typhoid character. The yellow fever was first

known here in 1817, re-appearing in the years 1819,–'22, and '27. There were many cases in 1829, mostly confined, however, to the European Spaniards driven from Mexico. These cases were owing to their mode of living, their filth, and their crowded condition; and being unacclimated, they were especially obnoxious to disease.

"The soldiery suffered in 1821,–'2,–'3, without assignable cause, from a disease called the *cold plague*, during which years the village was free from disease. It has not been known here since 1823. This disease prevailed in the month of May and part of June in each year. The symptoms were very similar to those of cholera, and were treated with mercurial cathartics in very large doses, sinapisms, the warm bath, &c.

"The causes of general sickness, in 1821,–'2,–'3, were exposure while at work on the barracks then building, intemperance, and labor in the Cypress swamp, about fifteen miles from this point, in procuring timber."

The relative influence of the seasons in the production of diseases generally is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
7 first quarters -	1,119	876	783
7 second " -	1,123	1,036	923
7 third " -	943	911	966
7 fourth " -	1,027	761	741
Annual ratio -	1,053	3,584	3,404

Hence every man, on an average, has been reported sick once in every three and a half months.

NEW ORLEANS.

LATITUDE 29° 57′ N., LONGITUDE 90° 14′ W.

The barracks, erected in 1834 and '35, are situated on the left bank of the Mississippi, three miles below the city proper. They form a parallelogram of about 300 feet on the river, extending back 900 feet. Built of granite and brick, the quarters are commodious, dry, and well ventilated. The grounds within the parallelogram have been raised thirty inches by means of earth, the external surface consisting of a stratum of shells; intersected by ditches, these grounds are easily maintained in a dry state. The quarters are sheltered from the north and northeast winds by a forest of cypress and other trees, which, commencing about 500 yards from the river, extends back towards Lake Ponchartrain.

As the troops have until recently been always quartered in New Orleans, this city is the station to be now described. Situated on the left bank of the Mississippi in a large bend of the river, it is distant 105 miles by the channel from its mouth, and 80 miles in a direct line, southeast; it is 50 miles from the Gulf of Mexico, south; 40 miles from Chandeleur bay, southeast; 15 miles from Lake Borgne, east; and 6 miles from Lake Ponchartrain, north. The city is built upon a sloping surface, which descends gently from the river to the lakes. It is not elevated more than eleven feet above the level of the ocean; and when the Mississippi becomes full, the streets are three or four feet below its surface, protected from inundation by the dyke or levee—an embankment made from a few miles above the Balize to the high lands about Baton Rouge on the east, and to Point Coupée, seven miles above Natchez, on the west side of the river. The draining company, established for the purpose of reclaiming the marshy lands between the city and Lake Ponchartrain, have been successful in rendering a large portion of the ground fit for cultivation. There are no hills in the vicinity of the city, the surrounding country being low and flat, and the soil alluvial. Cypress, laurel, and oak, the first most abundantly, are found. As the well-water of the city contains muriates of lime, magnesia, and soda, and bi-carbonate of lime and iron, rain and river water are used for culinary and all other purposes.

The annual amount of rain, on a mean of six years, is 51.85 inches. The following monthly results, based on three years' observation, are given by Surgeon Hawkins—

January	4.66	May	2.95	September	5.60
February	2.25	June	6.10	October	1.37
March	2.59	July	6.38	November	3.18
April	6.21	August	5.72	December	2.87

The diseases reported within the ten years are comprised in the following abstract—

The advantage of position, as regards salubrity, is strikingly illustrated in this locality. On reference to the history of this garrison prior to 1829, it will be found that, during the period when the arsenal was situated on the Savannah, disease prevailed to so great an extent that it was necessary to abandon the post in the summer season, and encamp on the "sand-hills." The advantages of this measure were, indeed, but partial; for as it was necessary to keep a guard at the arsenal, the men were in turn exposed to this miasmatic atmosphere. Thus, in the third quarter of 1825, all the garrison, with the exception of two men, suffered from the "country fever;" and, consequently, the only benefits of a summer encampment were, that fewer cases proved fatal, and relapses were less frequent.

The comparative influence of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
8 first quarters -	609	333	547
7 second " -	493	213	432
7 third " -	488	237	485
7 fourth " -	359	102	284
Annual ratio -	487	885	1,817

Hence each man, on an average, has been reported sick once in every six and a half months—a low ratio.

The fact that the first quarters present a higher average of sick than the third, is ascribable to the circumstance that the post had a very large command in the first quarter of 1833. The law, that an increase in the mean strength is followed by more than a corresponding ratio of disease, is one that obtains universally.

FORT MITCHELL.

LATITUDE 32° 19′, LONGITUDE 85° 10′.

This post is situated near the Chattahoochee, about ten miles below Columbus. Occupying an elevated ridge on the west side of the river, about one mile from its banks, this position is both salubrious and agreeable to the eye. Between the ridge and the river the lands are low, but generally speaking the locality is exempt from marshes.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Mitchell, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
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Mean Strength - -	29	96	92	87	-	446	-	49	-	-	799	47	139	83	72	135	168	-	103	36	-	725
Intermittent fever - -	-	-	-	-	-	21	-	2	-	-	23	-	1	1	-	-	3	-	7	2	-	14
Remittent " - -	-	-	1	-	-	1	-	1	-	-	3	4	-	-	-	-	2	-	-	7	-	13
Synochal " - -	3	-	-	-	-	1	-	-	-	-	4	4	-	-	-	-	-	-	12	9	-	25
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	-	4	3	24	-	41	-	5	-	-	77	2	2	9	-	-	-	-	4	1	-	18
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Diseases of the brain and nervous system - -	1	-	-	1		4		-	-	-	6	1	1	-	-	3	-	-	-	1	-	6
Dropsies - - -	-	-	-	2		6		-	-	-	8	-	-	-	1	-	1	-	1	-	-	3
Rheumatic affections -	-	2	2	-		22		1	-	-	27	2	2	1	1	2	2	-	1	1	-	12
Venereal " -	3	3	4	1		4		3	-	-	18	3	4	4	5	2	-	-	1	1	-	20
Ulcers and abscesses -	-	2	-	2		21		3	-	-	28	-	2	-	-	3	10	-	3	-	-	18
Wounds and injuries -	1	6	7	2		60		12	-	-	88	1	8	3	3	9	3	-	9	2	-	38
Ebriety - - -	-	-	-	-		3		-	-	-	3	-	-	-	4	-	7	-	-	-	-	11
All other diseases - -	3	9	39	5		60		12	-	-	128	6	35	29	18	40	9	-	27	4	-	168
Total - - -	18	32	61	42	-	390	-	53	-	-	596	35	72	61	59	74	80	-	112	34	-	527

The advantage of position, as regards salubrity, is strikingly illustrated in this locality. On reference to the history of this garrison prior to 1829, it will be found that, during the period when the arsenal was situated on the Savannah, disease prevailed to so great an extent that it was necessary to abandon the post in the summer season, and encamp on the "sand-hills." The advantages of this measure were, indeed, but partial; for as it was necessary to keep a guard at the arsenal, the men were in turn exposed to this miasmatic atmosphere. Thus, in the third quarter of 1825, all the garrison, with the exception of two men, suffered from the "country fever;" and, consequently, the only benefits of a summer encampment were, that fewer cases proved fatal, and relapses were less frequent.

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7 third " -	488	237	465
7 fourth " -	359	102	284
Annual ratio -	487	885	1,817

Hence each man, on an average, has been reported sick once in every six and a half months—a low ratio.

The fact that the first quarters present a higher average of sick than the third, is ascribable to the circumstance that the post had a very large command in the first quarter of 1833. The law, that an increase in the mean strength is followed by more than a corresponding ratio of disease, is one that obtains universally.

FORT MITCHELL.

LATITUDE 32° 19′, LONGITUDE 85° 10′.

This post is situated near the Chattahoochee, about ten miles below Columbus. Occupying an elevated ridge on the west side of the river, about one mile from its banks, this position is both salubrious and agreeable to the eye. Between the ridge and the river the lands are low, but generally speaking the locality is exempt from marshes.

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Dropsies	-	-	-	2		6		-	-	-	8	-	-	-	1	-	1	-	1	-	-	3
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In the State of Louisiana, the epidemic exhibited itself in its most malignant character. In New Orleans the victims numbered about 6,000, the population being then perhaps 55,000.

Cholera still continued its visitations upon this devoted city. In the first quarter of 1833, one death is reported from this cause. In the report ending the 30th June, it is remarked by Surgeon McMahon, that "the disease appeared sporadically here in April; it gradually increased until towards the close of May, when it assumed the epidemic form, committing the greatest ravages among all classes of citizens. The timely removal of the garrison saved it from total destruction. The ruinous condition of the hovel in which the troops were stowed, the want of a suitable hospital, and the enfeebled condition of both officers and men, were in themselves sufficient to warrant the anticipation of such a result." In this quarter there are reported 44 cases of cholera, three of which proved fatal. In the report of the third quarter, Surgeon McMahon remarks, that "yellow fever, or rather a complication of this disease and cholera, appeared shortly after the subsidence of the latter. Amongst the citizens, the average mortality from it has been about 70 per day up to this time." The command having been seasonably removed, none were present but a detachment of recruits, and several staff officers with their families. In the second quarter of 1834, there are again reported 3 deaths from spasmodic cholera. This report ends on the 15th May, the period at which the command departed for its usual summer encampment.

With the exception of the summer months, called emphatically the "sickly season," very little disease prevails at New Orleans. It is at this period that that fatal malady—yellow fever—is apt to make its visitation. There are but 3 deaths reported from this cause, owing to the circumstance that the troops were generally removed in May to the bay of St. Louis. In the third quarter of 1835, one death from yellow fever is reported at the bay of St. Louis, nine cases of the disease having been contracted at New Orleans by the troops ordered there to suppress an apprehended servile insurrection.

As this disease is one of more than ordinary importance, and frequently assumes a different character, the following extracts, based upon practical knowledge, cannot be otherwise than interesting—

In a report, dated October 5th, 1832, just preceding the invasion of Louisiana by cholera, Surgeon Lawson says: "The diseases of New Orleans, during this whole summer, have been attended with symptoms of uncommon malignity. Intermittents and remittents have been very unmanageable, being complicated with determinations of blood to the brain, the lungs, and other important organs; and in some instances the congestions have been so great as to destroy life in two or three days. These fevers, attended with an irregular form of dysentery, have been very fatal to the white creoles, and to the black population generally, whether natives or emigrants; to the former, because blood-letting and other efficient means were not employed at the onset of the disease; and to the latter, for the reason that they did not early enough, or perhaps at any time, receive the necessary attention.

"Yellow fever, which made its appearance late in the season, is of a very aggravated character; but it is, in most instances, a clearly developed disease of high arterial action, manifestly requiring one or more full bloodings, and an uninterrupted course of cathartic medicines for four or five days, or until the fever subsides. Calomel is the cathartic commonly employed, and it is decidedly the most efficient remedy. After the abstraction of from 16 to 24 ounces of blood, this medicine, to the extent of 20 or 25 grains, is prescribed, and for several days the dose is repeated, aided each time by castor oil and enemata according to circumstances. After the first day, the calomel, in addition to its special administration as a purgative, is prescribed in doses of five grains every three hours, with the view of irritating the salivary glands, and thus creating a diversion from more vital organs. There is no danger of prostrating the patient by excessive purgation, as it is very difficult to excite the intestinal canal into action, and to maintain it so subsequently. If the purgatives, on the first and second day, procure full and frequent discharges of black fœtid matter, consisting of indurated fœces, clotted bile or blood, the progress of the disease is generally at once checked; and afterwards, upon the supervention of ptyalism, the course of the disease is entirely arrested. Should the cathartics, however, fail to perform their office well on the first two days, the disease advances steadily, threatening destruction at every step to some vital organ. Under these circumstances we must resort to v. s. again and again, and redouble our efforts to excite the peristaltic action of the bowels. After the second day, blisters may be employed with great advantage to arrest vomiting, (which is frequently, though not universally, a distressing symptom,) to relieve gastric pain, or to act as a revulsive of cerebral excitement. The therapeutic means detailed, in connexion with diluents and cold ablutions, constitute the main and perhaps the only remedies required in this fever. Tonics, in most cases, are not necessary; none but the mildest, such as infusion of camomile, can be administered with advantage; the more powerful, such as sulphate of quinine, are absolutely inadmissible. This disease runs its course in a short time, either proving fatal in a few days by a concentration of its force on some one organ, or being itself vanquished on the fifth or seventh day. Having once yielded, the disease seldom renews the conflict.

"By far the most fatal disease of Louisiana, however, whether in our city or the low lands of the country, is the congestive form of fever, or, as it is called here, the *cold plague*. It is an insidious enemy, attacking most commonly the weak and enfeebled, and those laboring under mental depression. In many instances, the subject of the disease, before he himself or those around him are aware of it, becomes cold in the extremities, and on the superficies of the body generally, with the exception perhaps of the region of the chest; the blood retires to the interior of the system, and the patient is at once prostrated. The vital organs being overwhelmed, the system cannot of itself react, and not unfrequently all the means of art are of no avail in removing the load of oppression. There are other instances, however, in which the disease, although always insidious in its invasion, and never without

known here in 1817, re-appearing in the years 1819,–'22, and '27. There were many cases in 1829, mostly confined, however, to the European Spaniards driven from Mexico. These cases were owing to their mode of living, their filth, and their crowded condition; and being unacclimated, they were especially obnoxious to disease.

"The soldiery suffered in 1821,–'2,–'3, without assignable cause, from a disease called the *cold plague*, during which years the village was free from disease. It has not been known here since 1823. This disease prevailed in the month of May and part of June in each year. The symptoms were very similar to those of cholera, and were treated with mercurial cathartics in very large doses, sinapisms, the warm bath, &c.

"The causes of general sickness, in 1821,–'2,–'3, were exposure while at work on the barracks then building, intemperance, and labor in the Cypress swamp, about fifteen miles from this point, in procuring timber."

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7 third " -	943	911	966
7 fourth " -	1,027	761	741
Annual ratio -	1,053	3,584	3,404

Hence every man, on an average, has been reported sick once in every three and a half months.

NEW ORLEANS.

LATITUDE 29° 57′ N., LONGITUDE 90° 14′ W.

The barracks, erected in 1834 and '35, are situated on the left bank of the Mississippi, three miles below the city proper. They form a parallelogram of about 300 feet on the river, extending back 900 feet. Built of granite and brick, the quarters are commodious, dry, and well ventilated. The grounds within the parallelogram have been raised thirty inches by means of earth, the external surface consisting of a stratum of shells; intersected by ditches, these grounds are easily maintained in a dry state. The quarters are sheltered from the north and northeast winds by a forest of cypress and other trees, which, commencing about 500 yards from the river, extends back towards Lake Ponchartrain.

As the troops have until recently been always quartered in New Orleans, this city is the station to be now described. Situated on the left bank of the Mississippi in a large bend of the river, it is distant 105 miles by the channel from its mouth, and 80 miles in a direct line, southeast; it is 50 miles from the Gulf of Mexico, south; 40 miles from Chandeleur bay, southeast; 15 miles from Lake Borgne, east; and 6 miles from Lake Ponchartrain, north. The city is built upon a sloping surface, which descends gently from the river to the lakes. It is not elevated more than eleven feet above the level of the ocean; and when the Mississippi becomes full, the streets are three or four feet below its surface, protected from inundation by the dyke or levee—an embankment made from a few miles above the Balize to the high lands about Baton Rouge on the east, and to Point Coupée, seven miles above Natchez, on the west side of the river. The draining company, established for the purpose of reclaiming the marshy lands between the city and Lake Ponchartrain, have been successful in rendering a large portion of the ground fit for cultivation. There are no hills in the vicinity of the city, the surrounding country being low and flat, and the soil alluvial. Cypress, laurel, and oak, the first most abundantly, are found. As the well-water of the city contains muriates of lime, magnesia, and soda, and bi-carbonate of lime and iron, rain and river water are used for culinary and all other purposes.

The annual amount of rain, on a mean of six years, is 51.85 inches. The following monthly results, based on three years' observation, are given by Surgeon Hawkins—

January	4.66	May	2.95	September	5.60
February	2.25	June	6.10	October	1.37
March	2.59	July	6.38	November	3.18
April	6.21	August	5.72	December	2.87

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LATITUDE 29° 57′ N., LONGITUDE 90° 14′ W.

The barracks, erected in 1834 and '35, are situated on the left bank of the Mississippi, three miles below the city proper. They form a parallelogram of about 300 feet on the river, extending back 900 feet. Built of granite and brick, the quarters are commodious, dry, and well ventilated. The grounds within the parallelogram have been raised thirty inches by means of earth, the external surface consisting of a stratum of shells; intersected by ditches, these grounds are easily maintained in a dry state. The quarters are sheltered from the north and northeast winds by a forest of cypress and other trees, which, commencing about 500 yards from the river, extends back towards Lake Ponchartrain.

As the troops have until recently been always quartered in New Orleans, this city is the station to be now described. Situated on the left bank of the Mississippi in a large bend of the river, it is distant 105 miles by the channel from its mouth, and 80 miles in a direct line, southeast; it is 50 miles from the Gulf of Mexico, south; 40 miles from Chandeleur bay, southeast; 15 miles from Lake Borgne, east; and 6 miles from Lake Ponchartrain, north. The city is built upon a sloping surface, which descends gently from the river to the lakes. It is not elevated more than eleven feet above the level of the ocean; and when the Mississippi becomes full, the streets are three or four feet below its surface, protected from inundation by the dyke or levee—an embankment made from a few miles above the Balize to the high lands about Baton Rouge on the east, and to Point Coupée, seven miles above Natchez, on the west side of the river. The draining company, established for the purpose of reclaiming the marshy lands between the city and Lake Ponchartrain, have been successful in rendering a large portion of the ground fit for cultivation. There are no hills in the vicinity of the city, the surrounding country being low and flat, and the soil alluvial. Cypress, laurel, and oak, the first most abundantly, are found. As the well-water of the city contains muriates of lime, magnesia, and soda, and bi-carbonate of lime and iron, rain and river water are used for culinary and all other purposes.

The annual amount of rain, on a mean of six years, is 51.85 inches. The following monthly results, based on three years' observation, are given by Surgeon Hawkins—

January	4.66	May	2.95	September	5.60
February	2.25	June	6.10	October	1.37
March	2.59	July	6.38	November	3.18
April	6.21	August	5.72	December	2.87

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at New Orleans, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	-	93	77	-	113	-	-	-	283	-	-	-	92	86	102	115	-	-	-	395
Intermittent fever - -	-	-	-	8	4	-	16	-	-	-	28	-	-	-	14	4	5	-	-	-	-	23
Remittent fever - -	-	-	-	-	3	-	-	-	-	-	3	-	-	-	15	1	-	7	-	-	-	23
Synochal fever - -	-	-	-	35	8	-	38	-	-	-	81	-	-	-	12	-	2	-	-	-	-	14
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	-	-	-	6	10	-	35	-	-	-	51	-	-	-	-	9	18	-	-	-	-	27
Diseases of the digestive organs - - -	-	-	-	29	22	-	80	-	-	-	131	-	-	-	21	45	39	43	-	-	-	148
Diseases of the brain and nervous system - -	-	-	-	5	1	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Venereal affections -	-	-	-	4	2	-	3	-	-	-	9	-	-	-	2	1	-	-	-	-	-	3
Ulcers and abscesses -	-	-	-	2	1	-	3	-	-	-	6	-	-	-	1	-	-	2	-	-	-	3
Wounds and injuries -	-	-	-	7	3	-	2	-	-	-	12	-	-	-	9	5	13	2	-	-	-	29
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	-	-	2	-	-	1	-	-	-	3	-	-	-	2	-	1	-	-	-	-	3
Total - - -	-	-	-	98	54	-	178	-	-	-	330	-	-	-	77	65	79	54	-	-	-	275

	THIRD QUARTER.											FOURTH QUARTER.									
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	-	-	108	-	115	-	-	-	223	-	-	82	-	73	96	95	-	-	-	346
Intermittent fever -	-	-	-	-	-	-	11	-	-	-	11	-	-	4	-	3	12	10	-	-	-	29
Remittent " -	-	-	-	-	7	-	11	-	-	-	18	-	-	28	-	2	2	6	-	-	-	38
Synochal " -	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	4	2	6	-	-	-	26
Typhus " -	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	3
Diseases of the respiratory organs - -	-	-	-	-	5	-	7	-	-	-	12	-	-	8	-	16	8	8	-	-	-	40
Diseases of the digestive organs - - -	-	-	-	-	25	-	60	-	-	-	85	-	-	37	-	7	26	21	-	-	-	91
Diseases of the brain and nervous system -	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	1	-	-	-	32
Dropsies - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	-	2	-	-	-	2	-	-	1	-	-	2	2	-	-	-	5
Venereal " -	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	3	2	-	-	-	-	5
Ulcers and abscesses -	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	4	2	-	-	-	8
Wounds and injuries -	-	-	-	-	-	-	23	-	-	-	23	-	-	5	-	4	7	-	-	-	-	16
Ebriety - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases -	-	-	-	-	-	-	8	-	-	-	8	-	-	8	-	5	1	1	-	-	-	15
Total - - -	-	-	-	-	37	-	124	-	-	-	161	-	-	140	-	44	66	58	-	-	-	308

ABSTRACT exhibiting a condensed view of the principal diseases at New Orleans, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	-	93	77	-	113	-	-	-	283	-	-	-	92	86	102	115	-	-	-	395
Intermittent fever - -	-	-	-	8	4	-	16	-	-	-	28	-	-	-	14	4	5	-	-	-	-	23
Remittent fever - -	-	-	-	-	3	-	-	-	-	-	3	-	-	-	15	1	-	7	-	-	-	23
Synochal fever - -	-	-	-	35	8	-	38	-	-	-	81	-	-	-	12	-	2	-	-	-	-	14
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Diseases of the respiratory organs - - -	-	-	-	6	10	-	35	-	-	-	51	-	-	-	-	9	18	-	-	-	-	27
Diseases of the digestive organs - - -	-	-	-	29	22	-	80	-	-	-	131	-	-	-	21	45	39	43	-	-	-	148
Diseases of the brain and nervous system - -	-	-	-	5	1	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Venereal affections -	-	-	-	4	2	-	3	-	-	-	9	-	-	-	2	1	-	-	-	-	-	3
Ulcers and abscesses -	-	-	-	2	1	-	3	-	-	-	6	-	-	-	1	-	-	2	-	-	-	3
Wounds and injuries -	-	-	-	7	3	-	2	-	-	-	12	-	-	-	9	5	13	2	-	-	-	29
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	-	-	2	-	-	1	-	-	-	3	-	-	-	2	-	1	-	-	-	-	3
Total - - -	-	-	-	98	54	-	178	-	-	-	330	-	-	-	77	65	79	54	-	-	-	275

	THIRD QUARTER.											FOURTH QUARTER.									
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	-	-	108	-	115	-	-	-	223	-	-	82	-	73	96	95	-	-	-	346
Intermittent fever -	-	-	-	-	-	-	11	-	-	-	11	-	-	4	-	3	12	10	-	-	-	29
Remittent " -	-	-	-	-	7	-	11	-	-	-	18	-	-	28	-	2	2	6	-	-	-	38
Synochal " -	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	4	2	6	-	-	-	26
Typhus " -	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	3
Diseases of the respiratory organs - -	-	-	-	-	5	-	7	-	-	-	12	-	-	8	-	16	8	8	-	-	-	40
Diseases of the digestive organs - - -	-	-	-	-	25	-	60	-	-	-	85	-	-	37	-	7	26	21	-	-	-	91
Diseases of the brain and nervous system -	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	1	-	-	-	32
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	-	-	2	-	-	-	2	-	-	1	-	-	2	2	-	-	-	5
Venereal " -	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	3	2	-	-	-	-	5
Ulcers and abscesses -	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	4	2	-	-	-	8
Wounds and injuries -	-	-	-	-	-	-	23	-	-	-	23	-	-	5	-	4	7	-	-	-	-	16
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases -	-	-	-	-	-	-	8	-	-	-	8	-	-	8	-	5	1	1	-	-	-	15
Total - - -	-	-	-	-	37	-	124	-	-	-	161	-	-	140	-	44	66	58	-	-	-	308

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Wood, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	49	56	35	59	60	57	64	-	-	-	380	51	45	41	40	48	41	62	-	-	-	328
Intermittent fever -	1	9	15	13	16	6	4	-	-	-	64	5	7	18	5	-	2	7	-	-	-	44
Remittent " - -	-	-	-	-	-	-	1	-	-	-	1	-	1	-	4	10	-	3	-	-	-	18
Synochal " - -	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	2
Typhus " - -	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	2	12	5	32	15	1	5	-	-	-	72	-	7	1	10	9	-	2	-	-	-	29
Diseases of the digestive organs - - -	11	22	17	13	11	21	8	-	-	-	103	7	17	15	9	8	15	8	-	-	-	79
Diseases of the brain and nervous system -	2	4	-	4	3	-	-	-	-	-	13	1	3	-	1	-	-	-	-	-	-	5
Dropsies - - -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1
Rheumatic affections -	1	1	-	4	2	2	-	-	-	-	10	1	3	-	3	-	-	4	-	-	-	11
Venereal " - -	-	3	-	-	3	-	1	-	-	-	7	-	-	-	2	-	1	-	-	-	-	3
Ulcers and abscesses -	1	-	2	1	6	1	-	-	-	-	11	4	4	3	-	3	2	-	-	-	-	16
Wounds and injuries -	3	2	5	4	6	7	1	-	-	-	28	1	-	4	6	6	6	-	-	-	-	23
Ebriety - - -	-	-	-	3	1	-	-	-	-	-	4	-	-	-	2	-	-	-	-	-	-	2
All other diseases -	6	2	-	1	11	10	4	-	-	-	34	1	5	2	6	9	1	8	-	-	-	32
Total - - -	27	56	44	75	76	48	24	-	-	-	350	20	47	43	48	46	27	34	-	-	-	265

	THIRD QUARTER.											FOURTH QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength	51	44	53	31	39	30	59	-	-	-	307	44	39	54	46	40	42	55	-	-	-	320
Intermittent fever	1	22	37	18	20	2	4	-	-	-	104	1	12	6	10	6	-	5	-	-	-	40
Remittent fever	48	12	-	4	2	-	1	-	-	-	67	-	-	-	1	4	-	-	-	-	-	5
Synochal fever	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	2	-	-	-	-	-	2
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs	-	1	12	1	3	-	10	-	-	-	27	1	4	19	9	4	-	3	-	-	-	40
Diseases of the digestive organs	7	8	41	7	15	9	6	-	-	-	93	13	14	28	19	8	2	9	-	-	-	93
Diseases of the brain and nervous system	1	2	1	2	1	1	-	-	-	-	8	4	-	1	1	-	-	-	-	-	-	6
Dropsies	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2
Rheumatic affections	-	-	-	1	1	-	2	-	-	-	4	-	-	5	-	2	-	3	-	-	-	10
Venereal "	-	-	1	1	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	1
Ulcers and abscesses	-	2	2	-	1	1	1	-	-	-	7	1	2	4	2	-	-	1	-	-	-	10
Wounds and injuries	4	1	8	4	3	2	3	-	-	-	25	-	2	9	1	-	-	-	-	-	-	12
Ebriety	-	-	-	-	1	3	-	-	-	-	4	-	-	-	1	-	-	-	-	-	-	1
All other diseases	3	2	15	3	3	2	7	-	-	-	35	2	-	2	2	1	10	4	-	-	-	21
Total	64	50	117	41	50	20	35	-	-	-	377	24	35	74	46	27	12	25	-	-	-	243

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Jackson, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	-	-	-	59	52	45	62	-	-	-	218	-	-	67	55	-	-	-	-	-	-	122
Intermittent fever - -	-	-	-	2	3	-	13	-	-	-	18	-	-	12	6	-	-	-	-	-	-	18
Remittent fever - -	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
Synochal fever - -	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
Typhus fever - -	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	-	-	5	1	3	5	-	-	-	14	-	-	5	1	-	-	-	-	-	-	6
Diseases of the digestive organs - - -	-	-	-	15	-	10	18	-	-	-	43	-	-	8	6	-	-	-	-	-	-	14
Diseases of the brain and nervous system - -	-	-	-	1	-	-	1	-	-	-	2	-	-	1	2	-	-	-	-	-	-	3
Dropsies - - -	-	-	-	2	-	-	1	-	-	-	3	-	-	-	1	-	-	-	-	-	-	1
Rheumatic affections -	-	-	-	3	1	2	4	-	-	-	10	-	-	3	3	-	-	-	-	-	-	6
Venereal " -	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	5
Ulcers and abscesses -	-	-	-	1	-	-	1	-	-	-	2	-	-	3	-	-	-	-	-	-	-	3
Wounds and injuries -	-	-	-	1	-	2	4	-	-	-	7	-	-	4	2	-	-	-	-	-	-	6
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	-	-	2	12	4	23	-	-	-	41	-	-	3	1	-	-	-	-	-	-	4
Total - - -	-	-	-	33	17	21	72	-	-	-	143	-	-	43	25	-	-	-	-	-	-	68

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean strength - -	-	-	54	55	-	-	-	-	-	-	109	-	-	56	54	38	48	-	-	-	-	196
Intermittent fever - -	-	-	42	47	-	-	-	-	-	-	89	-	-	22	20	2	18	-	-	-	-	62
Remittent " - -	-	-	11	3	-	-	-	-	-	-	14	-	-	7	1	1	-	-	-	-	-	9
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Diseases of the respiratory organs - -	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	4	-	-	-	-	12
Diseases of the digestive organs - - -	-	-	11	17	-	-	-	-	-	-	28	-	-	9	8	4	12	-	-	-	-	33
Diseases of the brain and nervous system - -	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1
Dropsies - - -	-	-	-	1	-	-	-	-	-	-	1	-	-	6	-	-	-	-	-	-	-	6
Rheumatic affections -	-	-	2	2	-	-	-	-	-	-	4	-	-	2	2	1	3	-	-	-	-	8
Venereal " -	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1
Ulcers and abscesses -	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
Wounds and injuries -	-	-	1	1	-	-	-	-	-	-	2	-	-	-	3	1	1	-	-	-	-	5
Ebriety - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	-	5	6	-	-	-	-	-	-	11	-	-	8	1	-	1	-	-	-	-	5
Total - - -	-	-	74	78	-	-	-	-	-	-	152	-	-	57	37	11	39	-	-	-	-	144

Under the class of diseases of the respiratory organs are comprised 14 catarrh, 5 pneumonia, 11 pleuritis, and 2 phthisis pulmonalis; under the head of digestive organs, 61 diarrhœa and dysentery, 42 cholic and cholera, and 3 hepatitis; under the class of brain and nervous system, 1 epilepsy, and 5 mania a potu; and under that of venereal affections, 4 gonorrhœa, and 3 syphilis.

As the total of deaths, according to the post returns, is 14, and the aggregate mean strength is 224, the annual ratio of mortality is $6\frac{8}{10}$ per cent. Of the deaths, 9 are reported in the medical returns, viz. 2 congestive typhus, 1 pneumonia, 2 bilious cholic, and 1 chronic diarrhœa, 1 cholera, 1 dropsy, and 1 mania a potu, exhibiting a mortality of $5\frac{4}{10}$ per cent.

The annual mortality, although high, is below the actual average; inasmuch as these statistics embrace only 4 four years, in two of which the troops were removed to a salubrious position during the sickly season. "This post," says Assistant Surgeon Burton Randall, "is three months inundated, and six months exposed to violent diseases. The water retires about the first of June, and leaves a large deposit of alluvion, which inevitably gives rise to violent fevers." The annual ratio of fevers of malarial origin is high, although, for the reasons above stated, below the actual average, that of intermitting fever being 114, and that of remitting fever 15 per cent. No death, however, is reported from these diseases. The posts on the lower Mississippi, as regards disease, present a remarkable contrast in the seasons; one half the year being extraordinarily healthy, and the other moiety correspondingly insalubrious.

The following table exhibits the comparative influence of the seasons in the production of diseases in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
4 first quarters,	218	143	656
2 second " -	132	68	515
2 third " -	109	152	1,394
4 fourth " -	196	144	735
Annual ratio -	164	507	3,091

Every man has consequently, on an average, been reported sick once in nearly every four months.

FORT ST. PHILIP

Is situated on the Mississippi, at the mouth of Plaquemine river, directly opposite the post just described. As the post was abandoned on the 7th May, 1831, the records are too meagre to enter into regular statistical details. This station was always very insalubrious in the summer season.

The details pertaining to each post having been completed, the general results of the class will now engage attention.

The mortality of each post, and its relative degree of sickness, based on the statistics furnished during the period of ten years, are exhibited in the following table—

TABLE exhibiting the mortality of each post, and the relative degree of sickness.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Augusta Arsenal - -	487	18	17	885	1,817
Fort Mitchell - -	655	25	19	1,805	2,756
Baton Rouge - -	1,053	71	65	3,584	3,404
New Orleans - -	312	40	13	1,074	3,442
Fort Pike - - -	376	11	6	578	1,537
" Wood - - -	334	23	19	1,236	3,700
" Jackson - -	164	14	9	507	3,091
Aggregate - -	3,381	202	148	9,669	-
Ratio per 1,000 -	-	53*	44	-	2,860

The annual ratio of mortality, according to the medical reports, is $4\frac{4}{10}$ per cent., and according to the post returns, $5\frac{3}{10}$ per cent. As in the preceding classes, the deaths from epidemic cholera (8 at Baton Rouge, 19 at New Orleans, and 2 at Fort Wood) have been excluded in both calculations; and in the medical returns, those deaths also reported under the heads of drowned, frozen, and suicide. The ratio per 1,000 of mean strength annually under treatment being 2,860, it follows that every man, on an average, was on the sick-list once in a little upwards of every four months. Assuming this ratio as an index of the comparative salubrity of the several posts constituting this class, it is found that Fort Wood exhibits the highest, and Fort Pike the lowest extreme. Although the ratio annually sick is lower in this class than in the preceding one, yet the mortality, owing to the circumstance that fevers are of a more malignant nature, is higher.

In further illustration of the diseases of this region, showing the relation of season and climate with morbid action, the general results obtained from this class will now be exhibited.

* The aggregate mean strength, according to the post returns, is 3,810.

TABLE exhibiting the relative influence of the

DISEASES.	Augusta Arsenal.	Fort Mitchell.	Baton Rouge.	New Orleans.	Fort Pike.	Fort Wood.	Fort Jackson.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
INTERMITTENT FEVER.										
First quarter	13	23	80	28	13	64	18	239	3872	62
Second "	18	14	139	23	22	44	18	278	3591	77
Third "	36	34	208	11	23	104	89	505	2974	170
Fourth "	6	17	110	29	13	40	62	277	3087	90
Annual ratio	73	88	537	91	71	252	187	1299	3381	385
REMITTENT FEVER.										
First quarter	11	3	45	3	2	1	1	66	3872	17
Second "	35	13	70	23	9	18	1	169	3591	47
Third "	27	25	95	18	9	67	14	255	2974	86
Fourth "	6	9	100	38	7	5	9	174	3087	56
Annual ratio	79	50	310	82	27	91	25	664	3381	196
SYNOCHAL FEVER.										
First quarter	6	4	3	81	–	1	1	96	3872	25
Second "	4	25	5	14	3	2	1	54	3591	15
Third "	–	–	5	–	2	1	–	8	2974	3
Fourth "	8	–	8	26	–	2	–	44	3087	14
Annual ratio	18	29	21	121	5	6	2	202	3381	60
TYPHUS FEVER.										
First quarter	–	–	4	–	–	1	1	6	3872	2
Second "	–	–	19	1	–	–	–	20	3591	6
Third "	2	–	7	–	–	–	–	9	2974	3
Fourth "	–	–	5	3	–	–	1	9	3087	3
Annual ratio	2	–	35	4	–	1	2	44	3381	13
DIARRHŒA AND DYSENTERY.										
First quarter	28	129	160	100	6	41	22	486	3872	126
Second "	46	114	179	80	20	39	8	486	3591	135
Third "	35	87	111	50	25	26	14	348	2974	117
Fourth "	6	21	66	60	9	42	17	221	3087	72
Annual ratio	115	351	516	290	60	148	61	1541	3381	456

seasons in the production of morbid action, &c.

DISEASES.	Augusta Arsenal.	Fort Mitchell.	Baton Rouge.	New Orleans.	Fort Pike.	Fort Wood.	Fort Jackson.	Total.	Aggregate mean strength.	Ratio of cases per 1,000 of mean strength.
CATARRH AND INFLUENZA.										
First quarter - - -	61	64	77	49	30	68	6	355	3872	92
Second " - - -	10	14	41	22	6	26	2	121	3591	34
Third " - - -	8	–	36	5	6	22	–	77	2974	26
Fourth " - - -	7	12	66	38	17	40	6	186	3087	60
Annual ratio - - -	86	90	220	114	59	156	14	739	3381	218
PNEUMONIA.										
First quarter - - -	7	2	17	–	3	2	2	33	3872	9
Second " - - -	7	1	2	3	3	–	1	17	3591	5
Third " - - -	4	–	–	–	–	1	–	5	2974	2
Fourth " - - -	3	2	5	–	5	–	2	17	3087	5
Annual ratio - - -	21	5	24	3	11	3	5	72	3381	22
PLEURITIS.										
First quarter - - -	1	19	8	2	8	2	4	44	3872	11
Second " - - -	1	–	4	1	4	3	3	16	3591	4
Third " - - -	–	–	11	6	–	1	–	18	2974	6
Fourth " - - -	–	1	10	2	1	–	4	18	3087	6
Annual ratio - - -	2	20	33	11	13	6	11	96	3381	28
PHTHISIS PULMONALIS.										
First quarter - - -	2	1	2	–	3	–	2	10	3872	3
Second " - - -	2	–	5	1	2	–	–	10	3591	3
Third " - - -	–	1	2	1	–	1	–	5	2974	2
Fourth " - - -	–	1	2	–	2	–	–	5	3087	2
Annual ratio - - -	4	3	11	2	7	1	2	30	3381	9
RHEUMATISM.										
First quarter - - -	20	27	28	–	15	10	10	110	3872	28
Second " - - -	13	12	7	1	7	11	6	57	3591	16
Third " - - -	15	9	22	2	11	4	4	67	2974	22
Fourth " - - -	12	12	24	5	1	10	8	72	3087	23
Annual ratio - - -	60	60	81	8	34	35	28	306	3381	90

Compared with the last class, the following relations are found to obtain—In the former, the ratio of intermittent fever is nearly twice as high, whilst that of remittent fever is lower, being as 180 to 196. The annual average of diarrhœa and dysentery is lower in the class now under investigation, owing, in a great measure, to the circumstance that the troops were generally removed to healthy summer encampments; and to the same cause may doubtless be ascribed the result exhibited in the third quarter, which gives a lower ratio than either the first or second.

The two classes of the southern division exhibit a low ratio of pulmonary diseases as a class. As most of the stations of the class now under investigation are on the Lower Mississippi, and are much under the influence of large bodies of water, the ratios are correspondingly low. With the exception of phthisis pulmonalis, the average of each disease exhibits the usual diversity in reference to the seasons. As respects the first and third quarters, the ratios of catarrhal affections stand as 92 to 26, pneumonia as 9 to 2, and pleuritis as 11 to 6.

As these posts, with the exception of the first two, are very much under the modifying influence of large bodies of water, the ratio of catarrh and influenza is correspondingly low. Baton Rouge, it is true, does not acknowledge this equalizing agency in so eminent a degree as the stations that follow. Compared with the last class, the ratios are consequently much lower; and, owing to similar causes, the class of posts between the Delaware and Savannah presents averages correspondingly low. In comparison with the mean ratios of the three classes of the northern division of the United States, it is found that the average of catarrh and influenza, in this class, is not quite half as high; whilst the mean ratio of pneumonia and pleuritis is about the same, and that of phthisis pulmonalis is a little higher.

The annexed table exhibits, according to the Adjutant General's returns, the total of deaths in each month.

TABLE showing the number of deaths in each month.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Total of deaths in each month.	8	6	12	21	29	21	23	24	27	30	20	11	231

In this table, 29 deaths from epidemic cholera are included. So far as the quarters of the year are concerned, the number of deaths from this cause, that occurred in each, is as follows—In the first, 1; in the second, 11; in the third, 5; and in the fourth, 12.

SECOND CLASS.—EAST FLORIDA.

FORT MARION.

LATITUDE 29° 50′ N., LONGITUDE 81° 27′ W.

This class of posts, which constitutes the last to be described, lies in a climate of a nature very distinct from any region yet under investiga-

tion. The peculiar character of the climate consists less, as compared with more northern latitudes, in the mean annual temperature, than in the manner of its distribution throughout the year. Possessing an insular climate, the extremes of temperature are much modified. Although the winter at Fort Snelling is 47° 73′ colder than at Tampa Bay, the summer, at the latter place, is only 8° 24′ warmer. Although the mean annual temperature of Petite Coquille is nearly 2° lower, that of Augusta, Georgia, nearly 8°, and that of Fort Gibson upwards of 10° lower than at Tampa Bay, yet in all the mean summer temperature is higher. In the summer season, the mercury rises higher in every other portion of the United States, and even in Canada, than it does along the coast of Florida. In six years' observation at Key West, it was never known to rise above 90°. On reference to the tables given in the "Meteorological Register" these various relations, with many others, may be traced out and clearly ascertained.

Fort Marion is in the city of St. Augustine, which is situated on the bay of the same name. It is distant about two miles from the ocean, and about half a mile from Anastasia Island, which divides the bay from the ocean. The St. Sebastian, a small stream, runs within half a mile of the town; and North river, which rises about 35 miles north of the city, empties into the ocean immediately opposite the fort. There are a few marshes in the vicinity, but they are inundated twice every 24 hours by the tides; and there are also some low *hammock* lands from two to six miles distant, from which, when the wind prevails from the southwest, clouds of musquitoes issue in the month of June, subject to be driven back as the wind changes. The site of the city is slightly elevated, being about twelve feet above the level of the ponds and marshes in the vicinity. The adjacent country is level and generally sandy, some parts being sufficiently rich in calcareous and vegetable matter to produce most of the vegetables cultivated at the north. Oranges flourish here most luxuriantly; but, in the early part of 1835, all the groves in the northern half of the peninsula were wholly destroyed by frost—an occurrence previously unknown.

St. Augustine has long been celebrated as a winter residence for pulmonary invalids; but the city itself has claims upon the traveller's attention, not the least being the fact that it is the oldest town in the United States. The fort is also one of the oldest in the United States. It was finished, as appears by its now nearly illegible inscription, in 1756, in the reign of Ferdinand the Sixth. The walls consist of a concretion of sea shells obtained from quarries on Anastasia island; and as the material, under a bombardment, crumbles away without suffering fractures, the fort duly manned would be almost impregnable. The barracks and hospital are situated directly on the bay, about a mile south of the fort. The position of these buildings is elegible in every respect.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Marion, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength	45	58	54	58	48	42	-	-	-	-	305	62	56	57	54	49	43	-	-	-	-	321
Intermittent fever	-	2	-	2	-	-	-	-	-	-	4	4	-	4	-	-	2	-	-	-	-	10
Remittent fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	5
Synochal fever	-	-	-	-	-	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Typhus fever	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs	6	4	4	20	7	3	-	-	-	-	44	3	3	5	5	11	5	-	-	-	-	32
Diseases of the digestive organs	3	2	-	10	5	2	-	-	-	-	22	9	15	9	9	17	16	-	-	-	-	75
Diseases of the brain and nervous system	1	-	2	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	2
Dropsies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections	1	2	2	4	2	1	-	-	-	-	12	5	1	1	2	-	3	-	-	-	-	12
Venereal affections	1	1	1	1	2	-	-	-	-	-	6	1	-	-	-	-	-	-	-	-	-	1
Ulcers and abscesses	2	1	1	4	2	2	-	-	-	-	12	2	1	2	-	-	3	-	-	-	-	8
Wounds and injuries	4	2	6	6	6	1	-	-	-	-	25	2	1	4	4	4	4	-	-	-	-	19
Ebriety	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other diseases	3	1	2	3	2	3	-	-	-	-	14	4	3	1	2	1	2	-	-	-	-	13
Total	21	15	19	50	26	14	-	-	-	-	145	32	24	26	25	35	35	-	-	-	-	177

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	55	53	56	53	48	51	63	-	-	-	379	-	53	55	50	48	-	-	-	-	-	206
Intermittent fever - -	3	3	2	6	4	4	15	-	-	-	37	-	4	2	3	1	-	-	-	-	-	10
Remittent " - -	3	3	4	4	1	-	9	-	-	-	24	-	3	-	-	-	-	-	-	-	-	3
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	2	4	5	10	2	1	-	-	-	24	-	3	10	5	1	-	-	-	-	-	19
Diseases of the digestive organs - - -	11	3	2	13	9	5	4	-	-	-	47	-	1	3	7	14	-	-	-	-	-	25
Diseases of the brain and nervous system - -	1	10	-	-	-	-	1	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Rheumatic affections -	2	3	2	2	2	4	5	-	-	-	20	-	2	1	2	-	-	-	-	-	-	5
Venereal " - -	2	2	2	1	3	-	1	-	-	-	11	-	2	3	1	-	-	-	-	-	-	6
Ulcers and abscesses -	2	-	-	-	5	-	2	-	-	-	9	-	3	5	2	4	-	-	-	-	-	14
Wounds and injuries -	8	3	4	4	4	-	2	-	-	-	25	-	4	4	6	3	-	-	-	-	-	17
Ebriety - - -	-	-	-	-	-	-	8	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-
All other diseases - -	-	1	2	4	1	5	2	-	-	-	15	-	3	-	5	6	-	-	-	-	-	14
Total - - -	32	30	22	39	39	20	50	-	-	-	232	-	25	28	32	29	-	-	-	-	-	114

Under the class of diseases of the respiratory organs are comprised 86 catarrh, 14 pneumonia, 8 pleuritis, and 9 phthisis pulmonalis; under the head of digestive organs, 92 diarrhœa and dysentery and 65 cholic and cholera; under the class of brain and nervous system, 1 epilepsy and 2 mania a potu; and under that of venereal affections, 22 gonorrhœa and 2 syphilis.

The above abstract includes no returns later than 1835, as this post became, after that period, a general hospital for the troops in the field. As the total of deaths, according to the Adjutant General's returns, is 9, and the aggregate mean strength is 350, the annual ratio of mortality for seven years is $2\frac{7}{10}$ per cent. Of the deaths, 8 are reported in the medical returns, viz. 1 remittent fever, 2 convulsions from intemperance, and 5 from causes not specified.

This post has been at all times justly esteemed for its salubrity. Compared with the average mortality of southern posts in general, this station is found to exhibit a much lower ratio. The annual average of fevers of malarial origin is very low, that of intermitting fever being 20, and that of remitting fever 11, per cent. It is seldom that diseases of a malignant character appear at St. Augustine. Towards the close of the present year, (1839,) yellow fever, which ravaged the principal cities of our southern States, made its appearance at this station. This is only the second time that this epidemic has prevailed in this city within the period of 20 years, whilst at Charleston, we are told by Professor Dickson, that in 24 years' practice, but three have passed without his knowing the occurrence of yellow fever. The period at which it prevailed first at St. Augustine was immediately after the cession of the province by Spain. As much filth had been allowed to accumulate during a succession of years, both at this place and at Pensacola, the circumstances incident to its removal by the American authorities were regarded as the exciting cause of the disease by the medical officers of the army. The experience of a century and a half teaches us that the causes of yellow fever are perennially present in our southern cities. Indissolubly connected with our soil and climate, it maintains the same relation towards the animal economy, as the malaria of our immense low country. As regards the essential cause of yellow fever, we still remain in the dark. It is manifest, however, that to develope the cause, and to keep up its action, requires a high range of atmospheric temperature; and as this condition seldom obtains on the coast of Florida, it would seem to afford an apparent explanation of its infrequent occurrence in this region. As the extremes of temperature are much modified by geographical position, and as the combined influence of the various causes acting in the most intense degree appears necessary for its development, a link in the chain seems to be wanting. At Key West, as in the islands generally of the West Indies, yellow fever has prevailed with much malignity.

The relative influence of the seasons in the production of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
6 first quarters -	305	145	475
6 second " -	321	177	551
7 third " -	379	232	612
4 fourth " -	206	114	553
Annual ratio -	304	668	2,197

Hence every man, on an average, has been reported sick once in every five and a half months.

FORT KING.

LATITUDE 29° 12′ N., LONGITUDE 82° 12′ W.

The following extracts, in regard to the medical topography of Fort King, are taken from a paper transmitted to the Surgeon General's office, in 1837, by Assistant Surgeon Forry.

"As regards geographical position, this station is about 95 miles N. E. of the head of Tampa Bay, 130 S. W. of St. Augustine, perhaps 40 miles due west from the Gulf of Mexico, and 60 due east from the Atlantic ocean. The fort, which has been recently rebuilt, is situated on rising ground, partially encompassed by a hammock, which describes almost a semicircle, at an average distance of 500 yards from the pickets. The surface of the surrounding country is slightly undulating. The soil of the so-called *pine barren* consists of loose sand and a light admixture of vegetable mould, with an argillaceous substratum. Its principal vegetable productions are, the pitch pine, (*pinus vigida*,) black jack, (*quercus nigra*,) scrub oak, (*quercus catesbaei*,) palmetto, (*chamærops*,) and coarse herbaceous plants. The *hammocks* are rich marshy bottoms, composed of vegetable deposition, overgrown with redundant vegetation. Here flourish the live oak, with other species of the same genus, the cypress, magnolia, cabbage-tree, and several varieties of hickory, (*carya*,) all united by a cordage of vines and brambles, extending from trunk to trunk and from limb to limb, constituting an immense net-work of vegetation.

"My observations on vegetation have been limited. The dew-berry, or creeping blackberry, *rubus trivialis*, I discovered ripe in the Wahoo swamp, near Dade's battle-ground, in the middle of April. On our arrival at this post, on the 28th April, the dandelion, *leontodon taraxicum*, had already bloomed, and the *magnolia grandiflora* was just expanding its blossoms. The *chenopodium anthelminticum*, found here in the greatest abundance, is now (August 1st) just putting forth its organs of fructification. The Spanish moss, (*tillandsia usneoides*,)

which is produced very exuberantly, I discovered in every stage of existence in the month of June. My attention was first attracted by the manifest state of its organs, the stamens and pistils being half an inch long. The seed of this parasite has an egret more than six lines in length, consisting of a bundle of simple hairs without branches.

"The mineral productions of this region seem to be all of secondary formation. These stratified rocks contain organic remains, both animal and vegetable. They consist chiefly of carbonate of lime, and in some the most delicate structure of shells is preserved.

"No large bodies of water exist in the vicinity of this post. Three miles from this point is Silver spring, the source of a beautiful stream of the same name. From this fountain, remarkable for its transparency, Silver creek emerges at once a bold stream, 60 yards wide and 20 feet deep, running into the Ocklewaha about 12 miles from this post. A remarkable peculiarity is often found in regard to the course of waters; considerable streams sometimes disappear, and, after running several miles subterraneously, again emerge. Near Dade's battle-ground is a small lake, into which a rapid creek empties, but no outlet is visible. These waters are generally well stored with the finny tribe, whilst the forest abounds in every kind of game pertaining to the country.*

"Although large bodies of water do not exist in the vicinity, yet the actual quantity is very great, owing to the extensive marshy low lands, swamps, and stagnant pools; and as the soil is not completely covered with water, the circumstances most conducive to the evolution of those morbific agents resulting from solar influence obtain. The humidity of the vicinal *hammocks* gives rise to constant exhalations, which fall in heavy dews; and perhaps to this cause is to be ascribed, in some measure, the prevalence of intermitting fever.

"This post, which had been for some years the Seminole agency, has always maintained the character of being a healthy station. A striking advantage over most other localities in Florida is, the existence of a never-failing spring of excellent water."

The diseases reported within the ten years are comprised in the following abstract—

* Since the date of this report, a singular phenomenon occurred at the post of Micanopy. The waters of Lake Tuskawilla, perhaps a mile in length, suddenly disappeared subterraneously, leaving its inhabitants upon dry land. Orange lake is running off in a similar manner, about ten thousand acres having been completely drained.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort King, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	52	-	-	-	45	57	191	-	-	-	345	52	-	-	-	39	56	266	-	-	-	413
Intermittent fever - -	6	-	-	-	10	2	23	-	-	-	41	2	-	-	-	2	4	74	-	-	-	82
Remittent fever - -	1	-	-	-	-	1	-	-	-	-	2	2	-	-	-	2	3	10	-	-	-	17
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	4	-	-	-	4	8	4	-	-	-	20	6	-	-	-	7	4	8	-	-	-	25
Diseases of the digestive organs - - -	8	-	-	-	5	8	17	-	-	-	38	7	-	-	-	10	7	32	-	-	-	56
Diseases of the brain and nervous system - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	2
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Rheumatic affections -	2	-	-	-	-	1	6	-	-	-	9	3	-	-	-	1	1	5	-	-	-	10
Venereal affections -	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1
Ulcers and abscesses -	-	-	-	-	2	2	4	-	-	-	8	2	-	-	-	-	2	-	-	-	-	4
Wounds and injuries -	7	-	-	-	1	2	19	-	-	-	29	7	-	-	-	-	3	9	-	-	-	19
Ebriety - - -	4	-	-	-	4	-	-	-	-	-	8	3	-	-	-	2	-	-	-	-	-	5
All other diseases - -	1	-	-	-	8	2	4	-	-	-	15	-	-	-	-	6	3	12	-	-	-	21
Total - - -	33	-	-	-	34	26	78	-	-	-	171	32	-	-	-	32	29	151	-	-	-	244

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	-	-	59	55	331	-	-	-	445	-	-	-	49	57	75	246	-	-	-	427
Intermittent fever -	-	-	-	-	2	4	199	-	-	-	205	-	-	-	9	6	2	160	-	-	-	177
Remittent " -	-	-	-	-	6	4	30	-	-	-	40	-	-	-	-	4	1	19	-	-	-	24
Synochal " -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	12	-	-	-	14
Typhus " -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Diseases of the respiratory organs - -	-	-	-	-	5	-	1	-	-	-	6	-	-	-	1	-	2	9	-	-	-	12
Diseases of the digestive organs - - -	-	-	-	-	6	8	20	-	-	-	34	-	-	-	5	4	8	34	-	-	-	51
Diseases of the brain and nervous system -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Dropsies - - -	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	-	-	1	-	6	-	-	-	7	-	-	-	-	-	3	6	-	-	-	9
Venereal " -	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	1
Ulcers and abscesses -	-	-	-	-	-	4	3	-	-	-	7	-	-	-	-	4	3	8	-	-	-	15
Wounds and injuries -	-	-	-	-	3	2	18	-	-	-	23	-	-	-	9	-	6	20	-	-	-	35
Ebriety - - -	-	-	-	-	2	-	-	-	-	-	2	-	-	-	10	8	-	-	-	-	-	18
All other diseases -	-	-	-	-	11	5	4	-	-	-	20	Evacuated, July 3d.	-	-	13	-	7	9	-	-	-	29
Total - - -	-	-	-	-	38	28	281	-	-	-	347	-	-	-	48	30	32	278	-	-	-	388

Under the class of diseases of the respiratory organs are comprised 47 catarrh, 8 pneumonia, 4 pleuritis, and 4 phthisis pulmonalis; under the head of digestive organs, 117 diarrhœa and dysentery, 21 cholic and cholera, and 5 hepatitis; and under that of venereal affections, 4 gonorrhœa, and 1 syphilis.

This post was evacuated July 3d, 1829, and re-occupied July, 1832; abandoned in May, 1836, and re-established in April, 1837. As in the preceding station, no reports are included in the above abstract since the commencement of the present Indian disturbances. As the total of deaths, according to the post returns, is 14, and the aggregate mean strength is 420, the annual ratio of mortality is $3\frac{3}{10}$ per cent. Of the deaths, 7 are reported in the medical returns, viz. 2 remittent fever, 1 phthisis pulmonalis, 1 phrenitis, and 3 from causes not designated, being at the rate of $1\frac{7}{10}$ per cent. In the post returns, 10 deaths are reported in 1835, whilst but 3 are given in the sick reports, excluding the death of Lieut. Smith, who, with Gen. Wiley Thompson, the Indian agent, was massacred by a party of Seminoles. Assuming eight deaths as the total from all causes, with the exception of casualties, the annual ratio of mortality is nearly 2 per cent.

The annual average of fevers of malarial origin is high, that of intermitting fever being 123, and that of remitting fever 20, per cent.; but the ratio is very much reduced, if the year 1835 is excluded, the former being 38, and the latter 19, per cent. This post, however, has always been regarded as decidedly salubrious, with the exception of the liability to fever and ague. Violent fevers of the remittent form, and intermittents running into the same type, occurred in the latter part of the summer of 1837, owing doubtless to the circumstance that the smaller trees and undergrowth of a neighboring *hammock* had been cut down as a precaution against Indian ambuscade. It is a well known fact that military stations, near jungles, often continue healthy until the soil is brought under cultivation, or the trees and shrubbery cut down, exposing the boggy surface to the agency of solar action.

The following remarks are from the report of Assistant Surgeon Forry—

"Fevers generally assume the intermittent form. They are mostly of the tertian type, sometimes the quotidian, and very rarely the quortan or quintan. After the employment of mercurial cathartics, emetics, and blood-letting, according to the indications presented, the disease speedily and invariably yields to the use of sulph: quinine. It is seldom, however, that venesection is required. When not contra-indicated by diarrhœa, I always use the solution of quinine saturated with the sulph: magnesiæ. According to my experience, it not only adds much efficacy to the remedy, but its employment is admissible when slight febrile symptoms still contra-indicate the usual preparations of quinine. The happy effects of this prescription have been displayed also in cases that have assumed a chronic character, attended by visceral indurations and enlargements. In several neglected cases among the friendly Creeks, the continued use of this preparation alone speedily arrested the paroxysms, removed the icterode hue of the skin, and reduced the liver and spleen to their normal condition.

"Several cases of *scorbutus* have been presented. The disease manifests itself with most of the symptoms by which it is generally described. Muscular power is completely prostrated, the gums are swollen, spongy, and livid, the legs are anasarcous and covered with blotches of extravasated blood, and the nates sometimes, but very rarely, become the seat of bloody abscesses. These lesions gradually yield to the plentiful use of lemon acid and vegetables with vinegar. The only therapeutic means employed in conjunction is, the sulph: quinine dissolved in elixir vitriol. When stationed at Fort Armstrong, several cases of this disease occurred. Deprived of vegetables, they grew worse from day to day, until the free use of wild pepper-grass, (*lepidium virginicum*,) found in a neighboring swamp, was prescribed. At this post, we have the good fortune to find in great abundance *purslane*, renowned among the older physicians as an anti-scorbutic."

The comparative agency of the seasons in the causation of disease in general is shown in the annexed table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
4 first quarters -	345	171	496
4 second " -	413	244	591
3 third " -	445	347	780
4 fourth " -	427	388	909
Annual ratio -	408	1,150	2,819

Consequently every man, on an average, has been reported sick once in every four and a quarter months.

FORT BROOKE.

LATITUDE 27° 57′ N., LONGITUDE 82° 35′ W.

This post is situated at the head of Hillsboro' Bay, which is an arm of Espiritu Santo,* about 30 miles from the Gulf of Mexico. The Hillsboro' river empties into the bay at this point. The general aspect of the surrounding country is low and level. This post has always been regarded as a delightful station. Here tropical fruits, such as the lime, the orange, and the fig, find a genial soil. Vegetation, as already remarked, may be regarded as continuous throughout the year, wild flowers blooming, and culinary vegetables growing, in the month of January; and, at the same season, the water of the bay is generally of a temperature to admit of bathing.

The diseases reported within the ten years are comprised in the subjoined abstract—

* The whole bay is now generally known by the name of Tampa.

ABSTRACT exhibiting a condensed view of the principal diseases at Fort Brooke, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	183	193	92	105	-	-	173	-	-	-	746	-	80	97	104	172	-	-	-	-	-	453
Intermittent fever - -	13	25	9	6	-	-	7	-	-	-	60	-	50	5	10	21	-	-	-	-	-	86
Remittent " - -	-	10	-	-	-	-	-	-	-	-	10	-	6	3	1	1	-	-	-	-	-	11
Synochal " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	3	22	8	17	-	-	21	-	-	-	71	-	5	2	23	7	-	-	-	-	-	37
Diseases of the digestive organs - - -	35	58	25	18	-	-	34	-	-	-	170	-	34	24	39	41	-	-	-	-	-	138
Diseases of the brain and nervous system - -	-	1	-	-	-	-	-	-	-	-	1	-	1	2	1	-	-	-	-	-	-	4
Dropsies - - -	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	3	6	-	2	-	-	6	-	-	-	17	-	2	1	3	8	-	-	-	-	-	14
Venereal " - -	-	2	-	1	-	-	2	-	-	-	5	-	1	-	-	-	-	-	-	-	-	1
Ulcers and abscesses -	10	11	1	1	-	-	10	-	-	-	33	-	3	3	5	8	-	-	-	-	-	19
Wounds and injuries -	9	24	10	12	-	-	17	-	-	-	72	-	13	7	23	30	-	-	-	-	-	73
Ebriety - - -	-	3	-	19	-	-	6	-	-	-	28	-	1	7	-	15	-	-	-	-	-	23
All other diseases - -	33	9	3	11	-	-	18	-	-	-	74	-	1	10	11	6	-	-	-	-	-	28
Total - - -	107	171	56	87	-	-	121	-	-	-	542	-	117	64	116	138	-	-	-	-	-	435

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	225	96	93	-	-	-	164	-	-	-	578	234	95	93	-	-	-	186	-	-	-	608
Intermittent fever - -	52	21	8	-	-	-	97	-	-	-	178	30	23	8	-	-	-	50	-	-	-	111
Remittent fever - -	13	-	2	-	-	-	1	-	-	-	16	10	3	-	-	-	-	2	-	-	-	15
Synochal fever - -	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	5
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	28	8	12	-	-	-	6	-	-	-	54	24	5	6	-	-	-	3	-	-	-	38
Diseases of the digestive organs - - -	58	38	34	-	-	-	32	-	-	-	162	62	47	20	-	-	-	25	-	-	-	154
Diseases of the brain and nervous system - -	-	1	-	-	-	-	3	-	-	-	4	-	-	2	-	-	-	-	-	-	-	2
Dropsies - - -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Rheumatic affections -	1	-	2	-	-	-	2	-	-	-	5	4	-	3	-	-	-	5	-	-	-	12
Venereal affections -	-	1	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	4
Ulcers and abscesses -	10	8	12	-	-	-	4	-	-	-	34	5	14	5	-	-	-	3	-	-	-	27
Wounds and injuries -	12	9	10	-	-	-	7	-	-	-	38	18	5	8	-	-	-	12	-	-	-	43
Ebriety - - -	3	7	13	-	-	-	4	-	-	-	27	3	1	6	-	-	-	-	-	-	-	10
All other diseases - -	15	6	4	-	-	-	16	-	-	-	41	14	7	13	-	-	-	18	-	-	-	52
Total - - -	192	99	97	-	-	-	172	-	-	-	560	180	105	71	-	-	-	118	-	-	-	474

Evacuated, Sept. 3d.

Re-established in December.

Under the class of diseases of the respiratory organs are comprised 154 catarrh, 9 pneumonia, 28 pleuritis, and 1 phthisis pulmonalis; under the head of digestive organs, 364 diarrhœa and dysentery, 86 cholic and cholera, and 3 hepatitis; under the class of brain and nervous system, 4 epilepsy and 1 mania a potu; and under that of venereal affections, 9 gonorrhœa and 2 syphilis.

As a general hospital was established at this post as soon as the Seminole war began, no reports subsequent to the year 1835 are embraced in these statistics. As the total of deaths, according to the Adjutant General's returns, is 15, and the aggregate mean strength is 651, the annual ratio of mortality is $2\frac{3}{10}$ per cent. Of the deaths, 12 are reported in the medical returns, viz. 3 remittent fever, 1 continued fever, 1 intermittent fever, (in the cold stage of a quarter,) 1 cynanche trachealis, 1 meningitis, 1 acute hepatitis, 1 chronic diarrhœa, 1 atrophia, 1 drowned, and one from no specified cause. Excluding the case of asphyxia, the ratio, according to the medical returns, is $1\frac{8}{10}$ per cent.

Like the two preceding posts, this one has always been regarded as highly salubrious. The ratio of mortality is equally low. As regards fevers of malarious origin, the annual average of intermitting fever is 73, and that of remitting fever is 9, per cent. The high ratio of intermittent fever, both at this post and the preceding one, is owing in some measure to the exposure incident to detached service. The following extract is taken from the report for the third quarter of 1835, made by Assistant Surgeon H. L. Heiskell—"By a reference to the diary of the weather, it will be perceived that there were 57 days' rain during the quarter. The unusually wet season was doubtless a most prolific source of disease; to which may be added the exposed condition of a number of the men on detached duty. Of the three who died, one sickened of bilious remittent fever at a temporary post about 60 miles south, where he remained a number of days before he could be brought to this place; the second died of effusion upon the brain, produced by exposure on a distant boating expedition as an oarsman; and the third died of emaciation. The prevailing disease (intermitting fever) is irregular in its form, and assumes various protean characters. Sometimes the fever is preceded by a regular ague; at other times, by a slight chill; but oftener by none at all. One had the masked form of the disease, as described by Senac, attacking the eyes, only, with regular periodical pains; and in another case, the force of the disease was spent upon the arm and shoulder. Both were cured by quinine."

The following table exhibits the relative influence of the seasons in the production of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
5 first quarters -	746	542	726
4 second " -	453	435	960
4 third " -	578	560	969
4 fourth " -	608	474	780
Annual ratio -	596	2,011	3,374

Every man, on an average, has consequently been reported sick once in every four months and a half.

KEY WEST.

LATITUDE 24° 39′ N., LONGITUDE 81° 52′ W.

Key West, or Thompson's Island, lies about 60 miles southwest of Cape Sable. It is about ten miles long, and from one to three in breadth. Low and level as regards its general surface, the southeastern shore presents the most elevated point. This ridge, consisting chiefly of sand and shells thrown up by the sea, rises about five feet above high water-mark. In the interior of the island are found many marshes and lagoons, some of which are lower than the surface of the surrounding ocean. These marshy low lands, covered in some parts with fresh, and in others with salt water, doubtless constitute a prolific source of miasmata.* Another important feature in the medical topography of this island is the occasional appearance upon the beach of an immense quantity of marine substances, both animal and vegetable. The mass thus accumulated, during the prevalence of a south or southwesterly wind, lies in some places to the depth of several feet, and extends several miles along the shore. Although these decomposing materials emit in a few hours effluvia of the most offensive character, yet their agency in the production of disease is a question admitting of disputation.

This island is the most southern settlement of the United States. It contains about 1,400 inhabitants, and is a place of some commerce, chiefly in the way of wrecked goods. Having a good harbor, it has been from time to time the station of our West India squadron.

The mean annual quantity of rain, on an average of five years, is 31.39 inches.

The diseases reported within the ten years are comprised in the following abstract—

ABSTRACT exhibiting a condensed view of the principal diseases at Key West, for a period of ten years.

	FIRST QUARTER.											SECOND QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	54	55	50	53	59	-	-	-	271	-	-	64	55	-	53	59	-	-	-	231
Intermittent fever - -	-	-	-	7	6	2	4	-	-	-	19	-	-	3	4	-	3	2	-	-	-	12
Remittent " - -	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
Synochal " - -	-	-	8	-	-	1	-	-	-	-	9	-	-	3	-	-	-	1	-	-	-	4
Typhus " - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - -	-	-	3	9	2	1	4	-	-	-	19	-	-	3	3	-	2	1	-	-	-	9
Diseases of the digestive organs - - -	-	-	26	21	20	7	16	-	-	-	90	-	-	4	13	-	13	22	-	-	-	52
Diseases of the brain and nervous system - -	-	-	6	10	-	3	3	-	-	-	22	-	-	9	22	-	1	7	-	-	-	39
Dropsies - - -	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Rheumatic affections -	-	-	1	9	1	2	8	-	-	-	21	-	-	2	6	-	-	4	-	-	-	12
Venereal " -	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1
Ulcers and abscesses -	-	-	2	3	1	6	2	-	-	-	14	-	-	2	4	-	3	-	-	-	-	9
Wounds and injuries -	-	-	1	8	6	12	17	-	-	-	44	-	-	3	9	-	-	3	-	-	-	15
Ebriety - - -	-	-	-	21	-	6	-	-	-	-	27	-	-	-	11	-	6	2	-	-	-	19
All other diseases - -	-	-	4	5	1	20	18	-	-	-	48	-	-	24	15	-	8	8	-	-	-	55
Total - - - -	-	-	52	94	40	60	72	-	-	-	318	-	-	53	87	-	36	51	-	-	-	227

Evacuated in December, 1835.

ABSTRACT—Continued.

	THIRD QUARTER.											FOURTH QUARTER.										
Years - - - -	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838		1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	
Mean Strength - -	-	-	55	55	-	-	56	-	-	-	166	-	-	55	54	-	-	55	-	-	-	164
Intermittent fever - -	-	-	1	-	-	-	-	-	-	-	1	-	-	5	-	-	-	4	-	-	-	9
Remittent fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Synochal fever - -	-	-	-	-	-	-	16	-	-	-	16	-	-	-	22	-	-	-	-	-	-	22
Typhus fever - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diseases of the respiratory organs - - -	-	-	13	5	-	-	2	-	-	-	20	-	-	10	3	-	-	2	-	-	-	15
Diseases of the digestive organs - - -	-	-	18	23	-	-	14	-	-	-	55	-	-	14	6	-	-	13	-	-	-	33
Diseases of the brain and nervous system - -	-	-	18	10	-	-	10	-	-	-	38	-	-	3	12	-	-	-	-	-	-	15
Dropsies - - -	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
Rheumatic affections -	-	-	4	13	-	-	4	-	-	-	21	-	-	2	15	-	-	5	-	-	-	22
Venereal affections -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ulcers and abscesses -	-	-	3	4	-	-	-	-	-	-	7	-	-	3	-	-	-	2	-	-	-	5
Wounds and injuries -	-	-	10	10	-	-	-	-	-	-	20	-	-	2	13	-	-	4	-	-	-	19
Ebriety - - -	-	-	11	25	-	-	5	-	-	-	41	-	-	16	22	-	-	3	-	-	-	41
All other diseases - -	-	-	6	29	-	-	5	-	-	-	40	-	-	8	2	-	-	5	-	-	-	15
Total - - -	-	-	85	119	-	-	56	-	-	-	260	-	-	63	96	-	-	88	-	-	-	197

Under the class of diseases of the respiratory organs are comprised 41 catarrh, 3 pneumonia, 11 pleuritis, and 3 phthisis pulmonalis; under the head of digestive organs, 112 diarrhœa and dysentery, 22 cholic and cholera, and 27 hepatitis; under the class of brain and nervous system, 1 epilepsy and 11 delirium tremens; and under that of venereal affections, 2 gonorrhœa.

As the total of deaths, according to the Adjutant General's returns, is 24, and the aggregate mean strength is 268, the annual ratio of mortality is nearly 9 per cent. Of the deaths, 20 are reported in the medical returns, viz. 5 inflammatory fever, 2 phthisis pulmonalis, 2 hydrothorax, 1 chronic hepatitis, 1 casualty, 1 ebriety, and 8 from causes not designated, being at the rate of $9\frac{6}{10}$ per cent.

The mortality of this station is extraordinarily high. In April, 1833, the garrison, in consequence of sickness, evacuated the post temporarily, and occupied Fort Clinch. The quarterly sick-reports are not sufficiently full in details to be enabled to determine the precise character of the prevailing diseases. Of the 20 deaths, the causes of 8 are not specified; and the 5 fatal febrile cases, in the third quarter of 1835, are ascribed to the "fever of the climate," whilst the 16 cases which occurred are registered under the head of inflammatory fever. Fevers of malarial origin present a very low ratio, the average of intermitting fever being 20 per cent., and that of remitting fever less than 2 per cent. The cases of phthisis pulmonalis occurred in old drunkards; and to the agency of inebriation, combined with the influence of the summer season upon northern constitutions, the mortality is doubtless chiefly attributable.

Yellow fever prevailed among the naval forces stationed at this island in 1824. The epidemic is well described by Dr. Benjamin Ticknor, of the United States Navy. Independently of the operation of local causes, reference is made to excessive fatigue, unwholesome food, and the intemperate use of ardent spirits. The sailors drank not only to gratify the appetite, but to guard against an attack of fever. Agreeably to a regulation of the naval service, every man received a daily allowance of half a pint of rum or whiskey; but this quantity served only to whet the appetite, and to excite the well-known ingenuity of the soldier and the sailor in its obtainment. The effects of this excessive potation were rendered more pernicious in consequence of atmospheric vicissitudes; for the men, when in a state of high excitement, with the perspiration streaming from every pore, would throw themselves upon the floor or ground, and, falling asleep, lie thus exposed to the damp night air.

The relative agency of the seasons in the causation of disease in general is shown in the following table—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength treated quarterly.
5 first quarters	271	318	1,173
4 second " -	231	227	939
3 third " -	166	260	1,566
3 fourth " -	164	197	1,201
Annual ratio -	208	1,002	4,817

Hence every man, on an average, has been reported sick once in every two months and a half—a ratio exceedingly high.

TEMPORARY POSTS.

We come now, in conclusion, to the consideration of the posts temporarily established in various parts of the present theatre of military operations. The results, based upon the statistics of 31 stations, are confined to a single year, inasmuch as an exact separation previously between the regulars and volunteers is impracticable.

The topographical descriptions of the posts of this class, already given, afford some idea of the general features of this region, which consists of a succession of marshes, savannahs, and sandy pine forests. The soil of this coast is frequently of a deep alluvial character, and of comparatively recent formation. As the rivers annually bring down immense quantities of deposite, the land gains so rapidly upon the ocean that its waters have, as for instance at the mouth of the Mississippi, receded three or four miles within a century. Owing to this peculiarity in its formation, the country is a vast flat, with an occasional elevation produced by a sand-reef, covered with rank and tall grass, or with dense forests. Little elevated above the level of the sea, the southern portion of the peninsula presents, with the exception of a belt along the coast, an endless succession of swamps and marshes, called "*everglades.*" The dry "sand barren," covered with a forest of pines, forms much the greater part of the northern portion. A rich soil for cultivation is found along the coast, on the banks of rivers, or in those dense jungles, called *hammocks*, which seem to have been once lakes. The *pine barrens* are composed principally of silicious sand, more or less mixed with calcareous and vegetable matter. The swamps on the borders of rivers seem to be formed by inundation. Immediately after leaving the channel, the grosser part of the alluvial matter is deposited, forming a ridge; and this embankment, as the water subsides, prevents its complete return. The whole country being a dead level, the superabundant moisture remains until evaporated by the sun's rays; and the winds, traversing the grounds thus saturated, it is supposed, possess considerable agency in the causation of fevers.

The following abstract comprises the diseases reported in one year, at 31 posts, and among troops on the march—

ABSTRACT of diseases reported in one year at thirty-one posts, and among troops on the march.

	4th qr. 1838.		1st qr. 1839.		2d qr. 1839.		3d qr. 1839.		Whole year.		
Strength	3,016.		3,467.		3,280.		2,606.		3,092.		
Diseases.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Treated.	Died.	Proportion of deaths to numb'r treated.
Intermittent fever	303	1	142	–	304	–	607	1	1356	2	1 in 678
Remittent "	59	8	31	–	59	4	151	8	300	20	1 in 15
Synochal "	4	–	–	–	3	–	4	–	11	–	0 in 11
Typhus "	–	–	–	–	–	–	–	–	–	–	0 in 0
Diseases of the respiratory organs	103	1	171	3	76	2	116	1	466	7	1 in 67
Diseases of the digestive organs	492	17	517	8	626	4	464	7	2099	36	1 in 58
Diseases of the brain and nervous system	30	2	39	1	37	2	40	1	146	6	1 in 24
Rheumatic affections	69	–	137	–	60	–	74	–	340	–	0 in 340
Venereal "	45	–	18	–	15	–	16	–	94	–	0 in 94
Scorbutic "	6	–	1	1	25	1	28	1	60	3	1 in 20
Dropsical "	4	–	3	1	3	1	4	–	14	2	1 in 7
Ulcers and abscesses	81	–	85	–	49	–	105	–	320	–	0 in 320
Wounds and injuries	145	–	192	–	160	–	148	7	645	7	1 in 92
All other diseases	143	–	106	–	204	–	206	–	659	–	0 in 659
Total	1484	29	1442	14	1621	14	1963	26	6510	83	1 in 78
Ratio per 1,000	492	9 6-10	416	4	491	4 3-10	753	8 8-10	2105	27	—

Under the class of diseases of the respiratory organs are comprised 330 catarrh, 3 acute bronchitis, 34 pneumonia, 62 pleuritis, 23 phthisis pulmonalis, 4 hœmoptysis, and 6 asthma; under the head of digestive organs, 1,594 diarrhœa and dysentery, 113 cholic and cholera, and 22 hepatitis; under the class of brain and nervous system, 49 nyctalopia, 6 apoplexy, 12 epilepsy, and 15 mania a potu; and under that of venereal affections, 51 gonorrhœa, and 43 syphilis.

The 83 deaths are reported from the following causes, viz. 20 remittent fever, 2 intermittent fever, 1 pleuritis, 6 phthisis pulmonalis, 15 dysentery, 16 chronic diarrhœa, 5 gastro-enteritis, 2 apoplexy, 1 epilepsy, 1 phrenitis, 2 mania a potu, 3 scorbutus, 2 dropsy, 5 gun-shot wounds, and 2 casualties. The ratio of mortality is consequently $2\frac{7}{10}$ per cent.; but inasmuch as 7 deaths arose from wounds and injuries, and 1 from yellow fever contracted at Savannah, the total of deaths is reduced to 75, and the average mortality to $2\frac{4}{10}$ per cent.

It thus appears that the mortality, during a period of Indian hostilities, when the troops occupy a number of posts which dot the whole surface of the Peninsula, is, like the ratio prior to the war, remarkably low. It is seen, too, that a large proportion of the deaths arose from that class of diseases of a chronic character, to which soldiers of intemperate habits are peculiarly liable—29 fatal cases of phthisis pulmonalis, chronic diarrhœa, mania a potu, and dropsical and scorbutic affections being reported. As regards fevers of malarial origin, the annual average of intermittents is 44, and that of remittents is 10, per cent. In the latter, the ratio of fatal cases is 1 in 15. On comparing the second and third quarters, a singular relation between intermittent fever and the class of diseases of the digestive organs is perceived. In the former, the ratio of intermittent fever is 9, and that of the diseases of the digestive organs is 23, per cent.; and in the third quarter, the ratio of the former is 19, whilst that of the latter is only 17, per cent. As the average of the former is more than doubled in the third quarter, whilst that of the latter is decreased, it would seem, assuming an identity of cause, that the same morbific agents operating in a less intense degree produce, as in the second quarter, diseases of the digestive organs, and when more concentrated in their action, as in the third quarter, intermittent fever.*

It appears that intermittent and remittent fevers are both more frequent and fatal in that portion of Florida bordering on Georgia. Positions along the coast, and in many parts of the interior of the Peninsula, are often found very salubrious. Along the eastern coast, there are several posts at which a case of fever has not been reported in one, and even two quarters. Other localities again, many being selected less with reference to salubrity than military advantages, have proven very unhealthy. Fort Roger Jones, for example, established on the Oscilla river in Middle Florida, in March, 1839, by one company of Infantry, (42 men,) became so sickly that it was necessary to abandon it on the 13th June. The sickness commenced towards the end of May, and continued progressively to increase, not only numerically but in severity. All the fatal cases were confined to the commissioned officers, Captain Mitchell and Lieut. Pew having died at the post, and Surgeon Richard Clark on the sixteenth day after its abandonment.

"In Captain Mitchell's cases," says Assistant Surgeon McCormick, "the tertian type was plain and evident. On the 7th day, he was doing so well that I thought him free from danger, inasmuch as on that day he missed his regular paroxysm of fever, his mouth began to show evidence of mercurial impression, and the dejections from his bowels were dark and of a tarry consistence. I favored the evacuation by a dose of ol: ricini, which brought away free discharges of this vitiated bile; but, notwithstanding I pursued the active treatment adopted in the commencement of his disease, he was seized towards noon of the day following, viz., the eighth, with a chill, which lasted a considerable time, followed by fever and a remission on the following morning. As the mercurial impression, however, entirely disappeared, and the dejections from the

* The disposition in intermittents to observe septenary periods has been frequently remarked by medical officers in Florida.

bowels lost their favorable appearance, I began to fear that the disease was taking a very unfavorable turn. I therefore desired Surgeon Richard Clark in consultation; and as there was at our post a civil surgeon in the employment of Government, I concluded to ride over myself, and have some conversation with Dr. Clark on returning with him to Fort Roger Jones. Having got there in the evening, I found that Capt. M. had had a repetition of the chill, and although recourse was had to the most active remedies, we could scarcely produce any reaction. On the day following, he was seized with another chill, and no remedies we could use, although we applied the most powerful external stimulants, and continued the administration of the calomel in large doses every two hours, and by the advice of Surgeon Clark resorted to powerful internal stimulants, such as carb: ammoniæ, wine and brandy, were of any avail in overcoming the great congestion which had taken place, and which finally proved fatal."

Assistant Surgeon McCormick himself labored under an irregular form of intermittent fever, and on the day following the abandonment of Fort Roger Jones, Surgeon Clark was seized with a violent head-ache, a constant disposition to emesis, and a sense of great anxiety about the præcordia. After an illness of fifteen days, during which period constant efforts were unavailingly made to induce ptyalism, Surgeon Clark died at Welaunee, the residence of Col. Robert Gamble. These details are given to show with what concentrated virulence of action the effects of that mysterious agent termed malaria are sometimes manifested.

Under the class of diseases of the brain and nervous system are reported 49 cases of *nyctalopia*, *hœmeralopia*, or *paropsis noctifuga*, an affection of very unusual occurrence in other parts of the United States. In the application of these learned terms much confusion exists among authors, *hœmeralopia* and *nyctalopia* being used to express both night-blindness and day-blindness. The affections here reported are all, it is believed, cases of night-blindness; and as Hippocrates applied the term hœmeralopia to this form of the disease, it may be well to follow his example. As the cause of hœmeralopia seems to consist in an exhaustion of the power of the retina in consequence of exposure to strong light during the day, the disease is rarely met with except in intertropical climates, or those regions in which the ground is covered many months with snow. In the West Indies Europeans, more especially soldiers and sailors, suffer much from this affection. The same causes operating here are found to obtain in Florida, such as the full glare of a vertical sun in an unclouded sky, and the reflection of solar rays from the surface of water or a sandy soil. In Florida, its duration varies from one night to six or twelve months, whilst relapses are frequent. The treatment usually adopted consists in the use of cathartics, and the application of cups and blisters to the temples and the nape of the neck; but these remedies, as well as salivation, prove in many cases wholly unavailing.

The following table exhibits the relative influence of the seasons in the production of disease in general—

TABLE exhibiting the ratio of sickness.

Seasons.	Mean strength.	Number treated.	Ratio per 1,000 of mean strength, treated quarterly.
1 first quarter -	3,467	1,442	330
1 second " -	3,280	1,621	491
1 third " -	2,606	1,963	753
1 fourth " -	3,016	1,484	492
Annual ratio -	3,092	6,510	2,106

Consequently every man, on an average, has been reported sick once in every five months and a half.

It will be seen, according to the regimental returns, that there has been a progressive decrease each year in the mortality arising from all causes—"ordinary, killed in action, died of wounds, and accidental." In 1836 it was $11\frac{4}{10}$, in 1837 $6\frac{9}{10}$, in 1838 $4\frac{7}{10}$, and in 1839 $4\frac{7}{10}$ per cent., the average for the four years being $6\frac{1}{10}$ per cent. In the summer of 1836, the troops remaining in the Territory being chiefly concentrated on the frontier settlements, suffered much from disease. On the Suwanee river, the 4th Infantry experienced a high mortality. The following remarks from the report of Assistant Surgeon A. F. Suter, for the last quarter of 1836, at Fort Clinch, on the Withlacoochee, to which point the troops at Suwanee Old Town had removed on the 10th of November, will illustrate the general character of morbid action:

"It may not be inapplicable to this report to give a slight sketch of the fevers treated at Suwanee Old Town, during the past and early part of the quarter. In the month of July, the prevailing diseases were intermittents, remittents, and continued fevers and diarrhœa, mild in their general character, and yielding readily to the usual remedies. Towards the first of August the sickness of the post began to increase rapidly, the diseases being principally intermittent, remittent, cont., and yellow fever of a most malignant and congestive type, which, as the season advanced into September, became more violent and fatal. As regards their general course, they usually commenced as an intermittent, running immediately into a remittent or yellow fever, or terminating fatally in the second or third paroxysm in a state of congestion, although the previous exacerbations may have been very slight. The plan of treatment pursued and found most successful consisted in the administration of the sub: mur: hydrarg: in doses of xxv. or xxx. grains, followed in four or six hours by castor oil, if the calomel did not operate sufficiently. The sub: mur: hydrarg: was then continued in smaller doses, combined with the sulph: quina, every hour or two, to prevent a return of the paroxysm, and change the character of the discharges which were dark and fœtid. If these indications were not fulfilled before the return of the next paroxysm, and if the patient, in the cold stage, fell into a state of congestion, which was most usually the case if the disease had not been arrested, recourse

was then had to the most potent stimulants and tonics. Sinapisms were applied to the feet, calves of the legs, inside of the thighs, epigastrium, arms, wrists, and frequently to the chest and spine; and in some cases cups to the abdomen, followed by a blister dressed afterwards by ungt: hydrarg: fort. Internally were given wine, brandy, carb: ammoniæ, camphor, opium, serpentaria, and sulph: quiniæ. Enemata of infus: sem: lini: and tr: opii, were administered and frequently repeated to check the discharges from the bowels, which, by this time, invariably became frequent, involuntary, profuse, and watery, speedily reducing the patient to the most extreme state of debility compatible with life. The pulse became scarcely perceptible, the surface of the skin shrunken and overspread with a peculiar and fœtid perspiration exuded from every pore, the extremities cold, and the countenance of a leaden hue. If reaction could not be induced, all the symptoms increased, the abdomen became tympanitic, the breathing difficult, and finally a violent convulsion terminated life. On the 10th November, 1836, the command left the Suwanee for Fort Clinch. From that period to the end of the quarter the principal cases treated were scurvy and cachexia, among those brought from the Suwanee. All the deaths occurred among these, their constitutions being entirely destroyed by repeated attacks of fever."

The 22 deaths reported this quarter are from the following causes: continued fever, 1; remittent, 1; congestive, 3; malignant intermittent, 1; and typhus fever, 1; dysentery, 3; chronic diarrhœa, 2; pneumonia, 1; hydrothorax, 2; dropsy, 1; apoplexy, 1; epilepsy, 1; and cachexy and scurvy, 4.

Along the frontiers of Florida, as in our Southern States generally, may be seen deplorable examples of the physical, and perhaps moral, abjection, induced by marsh miasmata. In earliest infancy, the complexion becomes sallow, and the eye assumes a bilious tint. Advancing towards the years of maturity, the growth is arrested, the limbs become attenuated, and the viscera engorged. Boys of 15 years may be seen bowed down with premature old age—a mere vegetating being, with an obstructed, bloated, and dropsical system, subject to periodical fevers, passive hœmorrhages, and those other forms of disease which follow in the train of *malaria*.

Many localities consequently proved very unhealthy. Whilst some fell under the direct influence of disease, others brought away its germ. Not a few persons, who had maintained uninterrupted health in Florida, took sick upon returning north. It is, indeed, a remarkable fact in the medical history of fleets and armies, that, during the active progress of warlike operations, troops are little subject to the influence of disease. It seems as though the excitement of the passions has the power of steeling the system against the agency of morbific causes. On the contrary, as soon as the excitement is withdrawn, by a cessation of operations, and a return to the monotony of a garrison, the constitution manifests the consequences of recent fatigue and exposure.

A general opinion obtains that, to preserve health in localities subject to malaria, full living and a liberal allowance of wine are requisite. This opinion, so far as Florida is concerned, is founded in error. Irregu-

larities in diet and drink, more especially when the person has been unduly exposed to the direct influence of the sun, are found to be among the most frequent exciting causes of fever. It is a truth that holds good in every clime that, in proportion to the healthy state of the digestive organs, is the constitution enabled to resist the causes of disease, or to pass through it safely when under its influence. A plain and moderate diet is always most conducive to the preservation of health; and it is unreasonable to suppose that a regimen, leading to a deranged state of the digestive functions, can fortify the system against the influence of marsh miasmata. A stimulating regimen might prove a prophylactic in the damp and chilly atmosphere of Holland, but it is wholly inadmissible in the exciting climate of Florida.*

It is a law of the animal system, that a gradual and protracted exposure to morbific agents insensibly diminishes its natural susceptibility to their influence. Hence, the acclimated natives of insalubrious regions possess a comparative immunity from the diseases of the climate; or, rather, the system merely loses its susceptibility of being excited into those violent febrile commotions to which strangers, arriving from northern latitudes, are so peculiarly obnoxious in many localities in our Southern States. In the former class, the agency of this poison may be compared to a slow and concealed combustion; whilst in the latter, its operation is manifested in a raging and rapidly consuming flame. As the regular troops in Florida were almost wholly from the North, those that escaped the first summer, instead of gaining an immunity from disease by exposure to the climate, acquired an increased susceptibility of the system to it, in a less violent form. The power of resisting morbific agents, inherent in the animal organization, is so much diminished every succeeding summer, that the ratio constantly sick in each company, more especially as regards intermittent fever, bears a close relation to its period of service in the territory.

Those who advocate the doctrine of acclimatization, will be surprised to find how much the theory is opposed by numerical results. The statistical data, furnished in the West India commands, leads to the following conclusions: "1. That troops are likely to gain but little immunity from either disease or mortality by a prolonged residence in the West Indies. 2. That soldiers are not, in general, liable to any greater mortality during their first year of service there, than at any subsequent period. 3. That though, in years of ordinary mortality, corps long resident in the Island suffer as much, or even more, than those recently arrived, yet, during the ravages of epidemics, there appears a partial exemption in favor of the former." This *partial exemption*, however, may be reasonably ascribed to the fact that, as fear and despondency augment the susceptibility to fever, the minds of those newly arrived would be acted upon more powerfully than of those who had survived similar epidemics. The following table exhibits, in ratios per

* "I aver, from my own knowledge and custom, as well as from the custom and observation of others, that those who drink *nothing but water*, are but little affected by the climate, and can undergo the greatest fatigue without inconvenience."—*Mosely on Tropical Diseases.*

thousand of the mean strength, based upon extensive data, the influence of length of residence in the windward and leeward command:

Years.	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	General average.
Ratio of deaths per 1,000 of mean strength	77	87	89	63	61	79	83	73	120	109	140	85

From the table giving these results it appears that, whilst the mortality, during the first year, is in nine instances above the average, it is in twelve below it; that the mortality has increased, as often as diminished, with length of residence; and that, upon an average, the ratio of the last years is higher than the first. The prevailing opinion in regard to acclimatization is, therefore, disproved by numerical results. It may be worthy of observation that, whilst in the West Indies, and on the west coast of Africa, an attack of yellow fever secures no subsequent immunity, in Gibraltar, the same individual is seldom twice attacked—a phenomenon also observed at New Orleans.

The ensuing statistical details have been compiled from monthly returns in the Adjutant General's office. The following table exhibits the ratio of mortality, from all causes, in Florida, in 1836,-'7,-'8,-'9:

Commissioned officers, rank and file.				Commissioned officers.			
Years.	Mean strength.	Total of deaths.	Ratio of deaths per 1,000 of mean strength.	Years.	Mean strength.	Total of deaths.	Ratio of deaths per 1,000 of mean strength.
1836	1,345	153	114	1836	75	10	133
1837	2,753	191	69	1837	113	12	116
1838	3,218	151	47	1838	108	4	37
1839	3,160	149	47				
Total -	10,476	644	-	Total -	296	26	-
Average	-	-	61	Average	-	-	88

The ratio of the troops in Florida, $6\frac{1}{10}$ per cent., varies little from the general average of troops serving in the South in time of peace—a fact established by the results of statistical inquiries. It will be seen that this ratio is lower than that of the 4th Infantry, on an average of 10 years. As an evidence that no extraordinary mortality has been experienced in Florida, it is found that the average of the last three years, taking all the regiments in the army, is $4\frac{8}{10}$ per cent., whilst that of the last ten years is $4\frac{4}{10}$ per cent.; and that, although more than one-third of the actual strength of the army served in Florida in 1838,

yet the mortality of the whole army is only $4\frac{4}{10}$ per cent.—a ratio lower than the mean of ten years.

It may be supposed that the mortality among the invalids sent out of Florida will increase the ratio; but, on investigation, it is found that it does not materially affect the result. The only return of invalids, in the Adjutant General's office, that left Florida this year, (1839,) exhibits 54 in the harbor of New York. Of these, two died of chronic diarrhœa, one of whom was excessively intemperate. Amongst the invalids sent out of Florida during the years 1836,–'7,–'8, no more than 17 deaths can be traced. Of these, in 1837, one died in New York harbor, and five at Fortress Monroe; and in 1838, four deaths are reported at New Orleans, and seven at Fortress Monroe. Including these fatal cases, the annual mortality in Florida, from all causes, is increased from $6\frac{1}{10}$ to $6\frac{8}{10}$ per cent.

The ratio of mortality among commissioned officers, ($8\frac{8}{10}$ per cent.,) is higher than that of the troops in general. The ratio of sickness, however, it will be seen, is much lower. Of the 26 deaths, 7 were caused by wounds received in battle, 2 by the explosion of a steam-boiler, and 17 by disease. Computing those only that died from disease, the ratio is $5\frac{7}{10}$ per cent. In this calculation, those officers only who are reported *present* are embraced, excluding those on detached service, and absent on furlough or with leave.

As the foregoing table is confined to the years 1836,–'7,–'8, the aggregate of killed and wounded, as exhibited below, is much greater. Amongst the officers killed, eight fell in December, 1835; and in the same month, in the affairs of Clinch and Dade, 100 of the rank and file were killed.

STATEMENT of the number of commissioned officers of the regular army, killed and wounded, and who died of disease, in Florida, up to the 1st January, 1839.

Regiments and Corps.	Killed.						Wounded.							Died.						
	Lieut. Colonel.	Brevet Major.	Captains.	Lieutenants.	Asst. Surgeons.	Total.	Bvt. Majors Gen.	Brevet Majors.	Captains.	Brevet Captains.	Lieutenants.	Asst. Surgeons.	Total.	Bvt. Lt. Colonels.	Majors.	Brevet Majors.	Captains.	Lieutenants.	Asst. Surgeons.	Total.	Aggregate.
General officers - -	–	–	–	–	–	–	2	–	–	–	–	–	2	–	–	–	–	–	–	–	2
Artillery - - -	1	–	3	6	–	10	–	1	–	2	5	–	8	1	–	–	2	2	–	5	23
Infantry - - -	1	1	1	2	–	5	–	1	1	–	2	–	4	–	1	1	2	2	–	6	15
Dragoons - - -	–	–	–	2	–	2	–	1	–	–	–	–	1	–	–	–	–	2	–	2	5
Medical staff - -	–	–	–	–	1	1	–	–	–	–	–	1	1	–	–	–	–	–	4	4	6
Total - -	2	1	4	10	1	18	2	3	1	2	7	1	16	1	1	1	4	6	4	17	51

Amongst the "killed" are included two officers destroyed by the explosion of a steam-boiler, whilst two that committed suicide are not computed. In addition to these, a captain of the marine corps died of his wounds, and a colonel and medical officer of volunteers were killed in action. In 1838, no officer was killed, and but one wounded. Amongst the "died" are included three who left Florida sick, as well as two or three in whose death climate or exposure had very little agency.

The results in regard to non-commissioned officers and soldiers of the regular army killed and wounded in Florida, up to the 1st January, 1839, are as follows—

Killed - - - -	138
Wounded - - -	261
Total - -	399

The following abstract exhibits the number sick among troops serving in Florida on the last day of each month, compiled from the monthly regimental returns, thus showing the ratio constantly sick, and the influence of the seasons in the production of diseases—

ABSTRACT showing the ratio of sick, from the monthly regimental returns, &c.

	Commissioned officers, rank and file.					Commissioned officers.				
	1836	1837	1838	Total.	Ratio per 1,000 of mean strength constantly sick.	1836	1837	1838	Total.	Ratio per 1,000 of mean strength constantly sick.
January—Strength - -	670	2421	4409	7500		37	147	166	350	
Number sick -	69	497	608	1174	156	2	4	2	8	23
February—Strength - -	1120	2389	4231	7740		72	111	127	310	
Number sick -	102	424	614	1140	147	1	2	0	3	10
March—Strength - -	1401	2494	4154	8049		100	112	150	362	
Number sick - -	162	361	689	1212	150	2	0	0	2	6
April—Strength - -	1444	2652	4279	8375		82	127	141	350	
Number sick - -	240	336	674	1250	149	5	2	2	9	26
May—Strength - - -	1194	2528	4478	8200		69	115	141	325	
Number sick - -	203	410	825	1438	174	1	4	3	8	24
June—Strength - - -	1160	2398	2078	5636		52	91	58	201	
Number sick - -	281	509	344	1134	201	1	9	0	10	50
July—Strength - - -	1366	2230	2051	5647		56	77	56	189	
Number sick - -	371	569	372	1312	232	3	7	2	12	63
August—Strength - -	1312	2132	1969	5413		60	83	56	199	
Number sick -	410	580	321	1311	242	5	6	1	12	60
September—Strength -	1372	1493	1918	4783		68	68	53	189	
Number sick -	448	540	319	1307	250	1	5	0	6	32
October—Strength - -	1685	3252	2486	7423		92	118	86	296	
Number sick -	432	627	365	1424	192	3	5	0	8	27
November—Strength - -	1665	4169	3204	9038		102	149	131	382	
Number sick -	453	686	418	1557	171	4	5	1	10	26
December—Strength - -	1749	4431	3357	9537		110	153	135	398	
Number sick -	436	533	400	1369	143	4	7	0	11	28
Average - - - -					184	Average - -				31

The most striking result in this table is, the contrast between the ratio constantly sick among officers and that of the troops in general. The ratio of the officer being 3 $\frac{1}{10}$ per cent., and that of the troops generally 18$\frac{4}{10}$, the number constantly sick is six times greater among the latter. As 184 men out of every 1,000 serving in Florida are constantly sick, this number multiplied by 365 shows the annual average of days of sickness to 1,000 troops to be 67.160, or to each about 67 days in the course of the year; and pursuing a similar calculation in regard to the officer, we find that he is subject to no more than 11$\frac{1}{3}$ days of sickness in each year. But this striking disproportion is more apparent than real; for, among soldiers, every case of disease, however slight, is registered on the hospital books—a circumstance favored by him as it relieves him from duty. Moreover, as the sick left behind, or sent to a general hospital, are not immediately on recovery ordered to their proper companies, the average may be from this cause a little too high. This supposition is rendered probable by the sudden decrease, from 250 to 192, in the ratios of September and October—the period when each company gathers up its men in preparation for the opening campaign; but in referring to this result it is necessary to ascribe appropriate influence to other causes, such as change of season, as well as the accession of fresh troops from the north, by which the force is generally augmented one-half. The officer, on the contrary, seldom comes on the sick-list for slight ailments; moreover, his military pride induces him to make an effort to be reported on duty at the period of making the monthly returns. The high ratio constantly sick is to be ascribed less to the agency of climate than to the arduous and unceasing duties required of the soldier.

On comparing these results with those observed among civilians, similar remarks are applicable. The following table, showing the number constantly sick, the average extent of sickness throughout the year, and the duration of each attack, is given in Tulloch's Statistical Reports—

TABLE showing the number constantly sick, the average sickness throughout the year, and the duration of each attack—from Tulloch's Statistical Reports.

	Ages.	By tables of Scotch benefit societies.	By tables of English benefit societies.	Returns of E.Ind.Co. lab'rers in London.	Returns of Portsm'th dock laborers.	Returns of Wo'lwich dock laborers.
Constantly sick per one thousand,	20 to 30	11.4	15.4	13.6	19.9	23.4
	30 to 40	13.2	18.3	13.8		
		DAYS.	DAYS.	DAYS.	DAYS.	DAYS.
Average number of days sick in each year,	20 to 30	4.1	5.6	4.02	7.3	8.5
	30 to 40	4.8	6.6	5.06		
Average duration of each attack of sickness,	20 to 30	–	–	18.7	13.2	
	30 to 40	–	–	22.6		

The striking disproportion between the ratios annually under treatment, among soldiers and among the class of civil population here presented, arises from the circumstance, that among these laborers it is cases only of so serious a nature as to create a disability for manual labor that are recorded; for, whilst among soldiers an admission upon the sick-list secures an exemption from labor, among the working classes it is attended by loss of wages. Among troops, nearly two-thirds of all the diseases are of that class which seldom incapacitate a man for the labors of civil life. In a comparison of the relative extent of sickness among the civil and military population, these facts must be kept in view.

In the Prussian army, the number constantly sick, on an average of ten years, amounts to 44 per 1,000. Among troops serving in the United Kingdom, it is about 40 per 1,000. In the Mediterranean stations, the average of Gibraltar, Malta, and the Ionian Islands, is 44. The average of the stations in British America is about 45. In the West Indies, in the Jamaica command, 63, and in the windward and leeward command, 87 are constantly ineffective from sickness. With the exception of Florida, which exhibits a ratio of 184 per 1,000, the average of none of our stations has ever been ascertained.

The numerical results furnished in the above table confirm the opinions derived from ordinary observation in regard to the comparative unhealthfulness of the seasons. The ratio per 1,000 constantly sick in each quarter of the year is as follows—First quarter, 151; second, 175; third, 241; and fourth, 169.

Having concluded the investigation of the various stations in east and middle Florida, the results obtained as a class will be determined. The following table exhibits the mean strength, the mortality, and the relative degree of sickness at each post prior to the present Indian difficulties, and the same in regard to the aggregate of posts for the year ending 30th September, 1839—

TABLE exhibiting the mean strength, mortality, and relative degree of sickness of the posts in East and Middle Florida.

	Mean aggregate strength.	Deaths per Adjutant General's returns.	Deaths per medical returns.	Total of cases reported.	Ratio per 1,000 of mean strength, under treatment annually.
Fort Marion - -	304	9	8	668	2,197
" King - -	408	13	7	1,159	2,819
" Brooke - -	596	15	11	2,011	3,374
Key West - - -	208	24	20	1,002	4,817
Temporary Posts - -	3,092	125	76	6,510	2,105
Aggregate - -	4,608	186	122	11,341	-
Ratio per 1,000 -	-	39*	26	-	2,461

* The aggregate mean strength, according to the Adjutant General's returns, is 4,781.

The annual ratio of mortality, according to the medical reports, is $2\frac{6}{10}$ per cent., and according to the post returns, $3\frac{9}{10}$ per cent. This is the only class in which no death from epidemic cholera is reported; and in the total mortality given in the medical returns, but 8 deaths are excluded, viz. 1 drowned, and 7 from wounds. In the mortality of the temporary stations, as exhibited in the post returns, every death incidental to a state of war is given; and although the total of deaths is 49 greater than the number reported as arising from diseases, yet the average mortality is much lower than either of the two preceding classes. The ratio per 1,000 of mean strength annually under treatment being 2,461, it follows that every man, on an average, was under treatment once in nearly every five months. With the exception of the first two classes, this average is the lowest. Assuming this ratio as an exponent of the comparative salubrity of the several posts constituting this class, Key West is found in the highest extreme, and the temporary posts in the lowest.

The following table exhibits the relation of season and climate with morbid action, as illustrative of the diseases of this region—

With the exception of the south-western region, the ratio of intermittents in this class is higher than that of any other; but as regards remittents, it is found that the three preceding classes present higher ratios. As respects diarrhœa and dysentery, the relation is the same as that of intermitting fever.

As this class of posts is comprised in a region characterized by a mild, insular climate, the numerical results in reference to the class of pulmonary diseases, as might be anticipated, are correspondingly low. The annual ratio of all pulmonary diseases, as is seen below, is only 191, whilst in the third class of the northern division it is as high as 602. Contrary to the preceding classes, the usual diversity in the averages of the seasons is not here presented, as will be subsequently explained.

The annual results in reference to the class of pulmonary diseases, as well as the mortality from each, are exhibited in the subjoined table. As it is intended to make a comparison between our northern and southern regions, it has been deemed expedient to take the mean of the middle and southern divisions; as in the northern division the total of deaths is limited to those reported in the medical returns—

TABLE exhibiting the annual results and mortality of diseases

Southern region.	Mean strength.	Ratio of cases per 1,000 of mean strength.					Deaths						
		Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Total.	Catarrh and influenza.	Pneumonia.	Pleuritis.	Phthisis pulmonalis.	Hæmoptysis.	Total per medical returns.	Causes not specified.
Coast from Del. to Savannah*	3199	271	25	33	13	341	–	1	1	19	–	196	18
South-western stations - -	11140	290	39	52	11	392	–	31	2	61	2	458	75
Posts on lower Mississippi -	3381	218	28	23	9	277	–	2	2	10	–	178	20
Posts in East Florida - -	4607	143	15	24	9	191	–	–	1	9	–	131	17
Total - - -	22327	246	29	40	10	326	–	34	6	99	2	963	149

The total of deaths in each month, according to the Adjutant General's returns, is exhibited in the annexed table—

TABLE showing the number of deaths in each month.

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Total of deaths in each month.	9	17	7	10	11	16	20	22	28	14	13	19	186

* Fort Monroe is excluded from this class. There are reported 4 deaths from influenza, 8 from pneumonia, and 17 from phthisis pulmonalis.

GENERAL RESULTS.

Having completed the specific details of each division, and of each class of posts, the numerical results of these classes will be given, with the view to general conclusions.

The ratio of mortality, and the relative degree of sickness in each class, are exhibited in the following table, the divisions being limited to two, the northern and the southern—

TABLE exhibiting the ratio of mortality and the relative degree of sickness in each class.

	Mean aggregate strength.	Ratio of deaths per 1,000 by Adjt.Gen'ral's returns.	Ratio of deaths per 1,000 by Medical returns.	Total of cases reported.	Ratio per 1,000 mean strength under treatment annually
1st Class, Northern Lakes - -	5,975	13	9	13,053	2,185
2d " Coast of New England -	3,663	20	15	7,004	1,912
3d " Posts north of latitude 39°, and remote from the ocean and lakes	12,604	14	8	39,104	3,103
Ratio of Northern Division -	22,242	15	9	59,161	2,660
4th Class, Coast from Delaware bay to Savannah - - - - -	5,850	34	30	16,907	2,890
5th Class, South-western stations -	11,140	45	36	39,030	3,504
6th " Posts on the lower Mississippi - - - - - - -	3,381	53	44	9,669	2,860
7th Class, Posts in East Florida -	4,608	39	26	11,341	2,461
Ratio of Southern Division -	24,979	42	34	76,947	3,080
Average - - - - - -	47,221	30	22	136,108	2,882

The annual ratio of mortality, on an average of all the posts, is, according to the Adjutant General's returns, 3 per cent., and according to the medical reports $2\frac{2}{10}$ per cent. In each calculation, the deaths from epidemic cholera (130) are excluded; and in the latter, those also reported as suicide, asphyxia from cold or submersion, &c. The mortality, by the medical returns, may be therefore regarded as a pretty fair expression of climatic influence. The difference between the ratio of mortality of the northern and southern division is quite striking, the average of the latter being, according to the medical returns, nearly four-fold greater, and, according to the post returns, nearly three times higher, than that of the former. This disparity is equally manifest in the statistics of the first part, as shown by the results of four years, terminating with 1825. In 1822, this inequality, according to the post returns, is very remarkable, the annual ratio of mortality in the southern division

being $13\frac{8}{16}$, and in the northern no more than $1\frac{9}{16}$, per cent. A distinguishing feature between these two divisions is, that the northern exhibits little variation in the annual mortality, whilst the southern, in consequence of more fatal epidemic visitations, shows great extremes.

In regard to the comparative state of health among the troops, this table affords the following conclusions:—The ratio per 1,000 of mean strength annually under treatment, in the Northern division, being 2,660, it follows that every man, on an average, was reported sick once in every four months and a half. Pursuing the same calculation in respect to the the Southern division, the period is found to be very nearly four months; whilst the average of all posts included in these statistics is four months and a sixth. Assuming this ratio of sickness as an index of the comparative salubrity of the several regions represented by each class of posts, it is found that the coast of New England is on the lowest extreme, and the southwestern stations on the highest. The high ratio of the third class of the Northern division is more apparent than real, inasmuch as an extraordinary number of slight affections are reported among the cadets of the Military Academy. It has been already shown that, as diseases differ in their tendency to a favorable issue, this average is liable to lead to error; thus, although the extent of disease in the sixth class is comparatively low, yet the mortality, owing to the malignant nature of febrile diseases, is higher than any other class. During the ravages of epidemic fever, the mortality may be very great without the average number in the hospital being materially augmented. In the windward and leeward command of the West Indies, for example, the mortality is six times as high as in the United Kingdom, although the extent of sickness, as shown by the number of admissions into hospital, is but twice as great.

The disproportion between the relative extent of sickness among the military and civilians was brought under notice in considering the general results of the second class of the Southern division; but this striking disparity, it was shown, is ascribable to peculiarities of condition not apparent at first view. The extent and duration of sickness among the working classes have frequently engaged the attention of British legislation. In regard to the influence of age on disease and mortality, it has been determined that from birth to the age of puberty they decline, and that from this period they increase slowly, but in geometrical progression, up to the 50th or 60th year, and then more rapidly to the end of life.

In continuation of the subject of mortality, the following abstract, exhibiting the mean strength of every regiment, and the deaths in each for the period of ten years, compiled from monthly returns in the Adjutant General's office, is given—

ABSTRACT exhibiting the mean strength of every Regiment, and the deaths in each for a period of ten years, compiled from the monthly returns in the Adjutant General's office.

YEARS.	1st Art'y.		2d Art'y.		3d Art'y.		4th Art'y.		1st Inf'y.		2d Inf'y.		3d Inf'y.		4th Inf'y.		5th Inf'y.		6th Inf'y.		7th Inf'y.		1st Drag.		2d Drag.	
	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.	Strength.	Deaths.
1829	519	15	481	29	499	15	516	14	441	8	496	9	432	26	453	17	499	6	432	29	415	16				
1830	527	21	464	21	507	8	498	8	474	14	486	9	469	18	477	31	489	10	469	16	464	17				
1831	528	15	471	20	475	11	505	9	468	11	472	6	454	16	485	31	515	4	454	5	446	24				
1832	472	54	465	8	470	28	492	66	415	19	459	34	502	7	457	51	456	8	502	63	493	15				
1833	495	7	456	18	461	20	488	14	399	13	512	3	442	5	446	31	440	6	442	7	496	34	*147	6		
1834	485	22	431	12	481	15	495	7	480	6	494	4	452	37	452	21	513	10	452	22	446	72	463	91		
1835	512	12	491	81	506	48	493	11	488	10	514	3	468	13	442	20	505	2	468	32	483	38	530	18		
1836	459	45	401	26	440	28	476	8	421	9	484	11	418	13	369	70	396	4	418	17	451	9	559	15		
1837	374	17	401	23	414	24	407	16	342	7	498	7	378	13	460	49	250	0	378	46	421	21	583	33	578	33
1838	521	23	477	34	506	21	547	14	521	29	538	29	450	13	480	23	388	9	450	18	495	18	522	13	747	34
Tot'l	4892	231	4538	272	4759	218	4917	167	4449	126	4953	115	4465	161	4521	344	4451	59	4465	255	4610	264	2804	176	1325	67

* The mean strength is 353; but, as the corps was organized but five months in this year, it is equivalent to 147.

TABLE showing the annual ratio of mortality in each regiment, condensed from the preceding abstract.

CORPS.	Strength.	Deaths.	Ratio of deaths per 1000 of mean strength.
1st Artillery, - -	4,892	231	47
2d Artillery, - -	4,538	272	60
3d Artillery, - -	4,759	218	46
4th Artillery, - -	4,917	167	34
1st Infantry, - -	4,449	126	29
2d Infantry, - -	4,953	115	23
3d Infantry, - -	4,465	161	36
4th Infantry, - -	4,521	344	76
5th Infantry, - -	4,451	59	13
6th Infantry, - -	4,465	255	57
7th Infantry, - -	4,610	264	57
1st Dragoons, - -	2,804	176	63
2d Dragoons, - -	1,325	67	51
Total - - -	55,149	2,455	-
Average, - -	-	-	44

TABLE showing the annual ratio of mortality in the aggregate of Regiments.

Years.	Strength.	Deaths.	Ratio of deaths per 1,000 of mean strength.
1829	5,183	184	36
1830	5,324	173	32
1831	5,273	153	29
1832	5,183	354	68
1833	5,224	159	30
1834	5,644	320	57
1835	5,900	289	49
1836	5,292	256	48
1837	5,484	289	53
1838	6,642	278	42
Total - -	55,149	2,455	-
Average -	-	-	44

From these calculations it appears that the annual ratio of mortality in the United States army, from all causes—"ordinary, killed in action, died of wounds, and accidental"—is $4\frac{4}{10}$ per cent. This average is a fraction higher than the ratio of the three years ending with 1825, being

$3\frac{7}{10}$ per cent. The mortality of the four years commencing with 1819, although not precisely determined, is considerably higher. Compared with the results obtained in other countries, considerable diversity is presented. In the West Indies, the mortality of British troops, on an average of a period of twenty years terminating with 1836, is $9\frac{5}{10}$ per cent., and among the black troops $3\frac{8}{10}$ per cent., the mean being $7\frac{8}{10}$ per cent. This ratio, both among white and black troops, is about 50 per cent. lower than during the preceding twenty years. In British America we have the following results, based on the statistics of twenty years, ending with 1836—the Bermudas, $2\frac{9}{10}$ per cent.; Nova Scotia and New Brunswick, $1\frac{4}{10}$ per cent.; Canada, $1\frac{5}{10}$, and Newfoundland, (on an average of 12 years,) $3\frac{8}{10}$ per cent. In the Mediterranean, on an average of twenty years, the annual rate of mortality at Gibraltar is $2\frac{1}{10}$ per cent.; at Malta, $1\frac{1}{10}$, and the Ionian Islands, $2\frac{4}{10}$ per cent. The rate of the British troops serving at home, being the result of the statistics of seven years commencing with 1830, is $1\frac{7}{10}$ per cent. In the East Indies, at Bengal, the mortality of European troops is $5\frac{7}{10}$ per cent., whilst that of the native troops in the Madras Presidency is only $1\frac{4}{10}$ per cent. The mortality of the French army on the home station is about 2 per cent. In the Prussian army, the ratio is $1\frac{1}{10}$ per cent.; but this low scale of mortality is attributable less to greater salubrity of climate than to the circumstance that the soldiers are almost entirely between the ages of 20 and 25. The mean ratios of the following British stations, on an average of six years, from 1831 to 1837, stand thus: Ceylon $4\frac{8}{10}$, Mauritius $3\frac{5}{10}$, Cape of Good Hope $1\frac{8}{10}$, Bombay $3\frac{8}{10}$, Madras $5\frac{8}{10}$, and New South Wales $1\frac{4}{10}$.

The profession of arms during peace, as shown among the troops serving in the United Kingdom, involves no greater risk of life than that which attends civil pursuits. The ratio of mortality among the Dragoon Guards and Dragoons, whose average age was from 29 to 30, is $15\frac{8}{10}$ per thousand of the force annually. Taking a mean of the Carlisle Tables, the Government Annuity Calculations, and the Population Returns, the mortality among civilians at this period of life amounts to $11\frac{1}{2}$ per 1,000; but as this calculation is based on the average of town and country, whilst the troops are quartered principally in towns, the ratio is nearly equal. Marts of commerce have been truly designated "the sepulchres of the dead, and hospitals of the living." The unfavorable influence of density of population on health, is apparent from the single fact, that the average of 17 of the principal towns in Great Britain, taken from Parliamentary returns, shows the mortality of the civil population to be, instead of $11\frac{1}{2}$, upwards of 16 per 1,000. The result is, therefore, in favor of the military.

In the tables just given, showing the mortality of each regiment, some striking facts are presented. The extremes of mortality are exhibited in the 4th and 5th regiments of Infantry. The latter, which has had a kind of *home* station on our northern lakes, gives an annual rate as low as $1\frac{8}{10}$; whilst the former, which has borne the "tug of war" in climes less genial, shows an average of $7\frac{8}{10}$ per cent. The attention is also arrested by the results presented in the last three years; for, it is seen that the Florida war, as already shown, has not augmented the general mortality. The average of these three years is about the same as the ratio of ten years.

The subjoined outline of the stations occupied, and the duties performed, by each regiment, will serve to illustrate the numerical results furnished by the statistical data. Having investigated the medical topography of our military posts, we are now enabled to study with profit, in proportion as a correct knowledge of the relative influence of each region has been attained, the connexion between the mortality exhibited and the positions occupied.

Proceeding on the scale of increasing mortality, the lowest ratio, $1\frac{8}{10}$ per cent., is that of the 5th Infantry, which, in 1829, garrisoned Forts Brady, Howard, Mackinac, and Dearborn, and continued, during the ten years, in nearly the same position on the lakes.

The 2d Infantry, $2\frac{2}{10}$ per cent., occupied in 1829 Hancock and Madison Barracks, and Forts Gratiot and Niagara. It continued in the same region until 1837, when six companies were ordered to Florida; and in 1838 the whole regiment served in the Seminole campaigns.

The 1st Infantry, $2\frac{9}{10}$ per cent., in 1829 was stationed at Forts Snelling, Crawford, and Winnebago. It remained in the Northwestern Territory until 1837, in which year, and in 1838, it served in Florida.

The 4th Artillery, $3\frac{4}{10}$ per cent., in 1829, garrisoned Forts Columbus, Delaware, McHenry, and Severn. Until 1836, no company got farther south than Charleston Harbor. In 1836–'7–'8, it served among the Creeks, Seminoles, and Cherokees.

The 3d Infantry, $3\frac{6}{10}$ per cent., in 1829, occupied Fort Armstrong and Jefferson Barracks. In 1830, the same posts—four companies being detached on Red river, and two in the Creek nation. In 1831, it was removed to Forts Jesup and Towson, on which frontier the regiment remained.

The 3d Artillery, $4\frac{6}{10}$ per cent., from 1829 to 1835 inclusive, was stationed on the coast of New England. In 1831, three companies were detached to Fort Monroe; in 1832, two to Charleston harbor; in 1833, two to the Creek nation; and in 1834, two to Fort Brooke, Florida. In 1836–'7, the regiment served in Florida; and in 1838, it marched to the Cherokee nation and back to Florida.

The 1st Artillery, $4\frac{7}{10}$ per cent., garrisoned in 1829 Forts Monroe, Johnston, and Washington, and Bellona Arsenal. In 1830,–'1,–'2, the same posts, three companies having, in the last year, removed to Charleston harbor. In 1833–'4–'5, it was still on the middle coast. In 1836–'7, it served in Florida; and in 1838, on the frontiers of Canada.

The 2d Dragoons, $5\frac{1}{10}$ per cent., served nearly altogether in East Florida.

The 6th Infantry, $5\frac{7}{10}$ per cent., in 1829–'30–'1–'2–'3, was stationed at Jefferson Barracks and Cantonment Leavenworth; in 1834–'5, at Jefferson Barracks; in 1836, on the Sabine; and in 1837–'8, in Florida.

The 7th Infantry, $5\frac{7}{10}$ per cent., in 1829 occupied Forts Gibson and Jesup, and continued on the southwestern frontier.

The 2d Artillery, 6 per cent., from 1829 to 1835 inclusive, was stationed on the sea-board from Charleston to New Orleans, and at Fort Mitchell and Augusta Arsenal. In 1836–'7, it served in Florida; and in 1838, marched to the Cherokee Nation, and thence to the frontiers of Canada.

The 1st Dragoons, $6\frac{3}{10}$ per cent., in 1834 garrisoned Forts Gibson, Des Moines, and Leavenworth. Its operations have been confined to the same region, making frequent tours among the Indian tribes. In 1834, one company was detached as an escort to a caravan of traders to Santa Fé in Mexico.

The 4th Infantry, $7\frac{6}{10}$ per cent., from 1829 to 1835, occupied Forts Clinch, Brooke, King, Mitchell, and St. Philip, Augusta Arsenal, Key West, New Orleans, and Baton Rouge. In 1836–'7, it served in the Seminole campaigns, and in 1838 in the Cherokee nation.

Having already determined the comparative salubrity of each system of climate, confirmation is afforded in the fact that the mortality of each regiment bears a ratio corresponding to these laws. The high mortality of our army, compared with that of British troops at home, in the Mediterranean, and in British America, is, in a great measure, susceptible of explanation. Although our troops are better paid, fed, and clothed than those of any other nation, yet, as they are distributed along a seaboard of more than 3,000 miles, and an inland frontier of perhaps equal extent, and as the condition of our Indian tribes and other causes demand their frequent removal from one extremity to the other, the duties of the soldier are often very arduous. A regiment recently, in the course of one year, marched 4,000 miles, 1,000 of which were performed on foot. Independently of marching and fighting, the duties required of the soldier are generally very laborious. Cutting roads, building bridges, constructing forts, &c., also fall to his share of duty.

Scarce a year passes without some hostile demonstration. In 1829, the unsettled state of the Creeks, and the intrusion upon the lands of the Cherokees, required the advance of troops; and to afford protection to the trade carried on with the Mexican States, a detachment was ordered to escort the caravans as far as our boundary line. In 1830, our troops were kept in motion by Indian disturbance on Red river; by threatened hostilities among the tribes inhabiting the country around Prairie du Chien; by the lawless intruders upon the mineral district of the Cherokees within the limits of Georgia; and by negro insurrectionary movements about New-Orleans. In 1831, we had disturbance among the Sac Indians, and servile insurrection in Virginia. In 1832 came the war of Black Hawk, when the most formidable enemy encountered was cholera. In 1834, Colonel Dodge's command, in his expedition among the Camanches, Pawnees, and Kiowas, suffered much from sickness. In 1835 the Dragoons, divided into three squadrons, made tours through almost the entire extent of our territory west of the Mississippi, below the 44° of latitude. In the same year occurred Dade's disaster. In 1836, we had the Seminole war, Creek and Cherokee difficulties, and threatened hostilities on the Texian frontier. In 1837, the Florida war and Cherokee troubles continued; and, in 1838, in addition to these difficulties, disturbances were manifested on the Canada frontier.

In continuation of the "*General Results*," a condensed view of the facts developed in each class, in reference to certain specific diseases having a close relation with season and climate, will be given. The following table shows the ratio of cases of each disease, per 1,000 of mean strength, reported quarterly and annually—

TABLE exhibiting the ratio of cases of each disease per 1,000 *of mean strength, reported quarterly and annually.*

	Feb. Intermit.					Feb. Remit.					Feb. Synoch.					Feb. Typhus.					Diarrhœa and Dysentery.				
	1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual results.	1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual results.	1st quarter.	2d quarter.	3d quarter.	4th quarter.	An'l results	1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual results.	1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual results.
First class	13	73	77	36	193	3	6	21	4	33	4	5	4	3	16	1	5-10	7-10	1 8-10	4	34	54	121	49	253
Second class	2	15	11	9	36	3	9	8	6	26	12	14	6	11	43	—	2	2	1	5	14	26	108	22	170
Third class	21	34	57	40	151	2	3	13	6	24	11	13	16	6	45	3-10	1-10	4-10	8-10	9-10	32	54	163	56	305
Ratio of Northern division	15	41	55	35	143	2	5	14	5	26	9	11	11	6	37	4-10	5-10	8-10	7-10	2 4-10	30	49	143	49	269
Fourth class	41	71	158	101	370	3	20	110	48	181	8	6	6	7	27	7-10	3-10	1 2-10	1	3	41	133	204	65	455
Fifth class	101	129	305	197	747	12	19	104	38	180	2	4	14	5	25	2-10	1	1 4-10	1 3-10	4	62	185	223	121	597
Sixth class	62	77	170	90	385	17	47	86	56	196	25	15	3	14	60	2	6	3	3	13	126	135	117	72	456
Seventh class	52	105	244	138	520	9	20	55	23	102	2	2	5	10	18	2-10	—	—	5-10	7-10	111	136	125	124	495
Ratio of Southern division	71	103	243	146	568	10	23	95	38	168	7	6	9	7	25	5-10	1 3-10	1 3-10	1 2-10	4 4-10	76	156	190	99	526
Average	45	75	156	93	368	7	15	58	22	101	8	8	10	7	33	5-10	1	1	1	3 5-10	54	107	166	75	405

The data upon which the ratio of each division, and the average of the whole are based, are presented in the annexed abstract—

TABLE showing the data upon which the ratio of each division and the average of the whole are based.

Northern Division.	Mean Strength.	Total cases of feb. int.	Total cases of feb. rem.	Total cases of feb. synoch.	Total cases of feb. typhus.	Total cases of diarrhœa and dysentery.
1st quarter - - -	23,226	354	56	219	10	690
2d quarter - - -	21,164	868	100	230	11	1,046
3d quarter - - -	21,775	1,188	308	242	17	3,119
4th quarter - - -	22,801	777	123	134	16	1,126
Total - - -	22,240	3,187	587	825	54	5,981
Southern Division.						
1st quarter - - -	25,751	1,836	257	176	13	1,965
2d quarter - - -	25,146	2,589	587	140	34	3,920
3d quarter - - -	25,206	6,127	2,407	225	32	4,781
4th quarter - - -	24,817	3,632	945	177	31	2,469
Total - - -	24,979	14,184	4,196	718	110	13,135
Aggregate - -	47,219	17,371	4,783	1,543	164	19,116

The results afforded in these tables are valuable as indicating the actual ratio in which these diseases prevail, both in reference to the influences of season and climate. As regards the comparative prevalence of intermittent fever in the northern and southern divisions, the annual ratio per 1,000 is as 143 to 568. In the northern division the second class, or coast of New England, is nearly wholly exempt from this disease, most of the cases reported being of foreign origin. The first class, or region of the lakes, gives the highest ratio. The third, comprising the posts remote from the ocean and the great lakes, also gives a high average; but this is owing chiefly to the locality and latitude of Forts Crawford and Leavenworth, the disease being little known at the remaining stations of this class. In the southern division, the results demonstrate that diseases of malarial origin increase in proportion as southern latitudes are reached; but this law receives modification in this, that inland regions, contrasted with those on the coast in the same latitude, have, owing doubtless to the greater summer heats, a higher average. The annual ratio of the fourth class, embracing the posts on the sea-coast and the estuaries between the Delaware and Savannah rivers, is, for example, 370, whilst the average of the southwestern stations rises to 747. The ratio of the sixth class is only 385, but it is to be remarked that the troops were generally removed to healthy summer encampments. The ratio of the seventh class (East Florida) is 520.

In relation to diarrhœa and dysentery the same laws, it is seen, hold good generally in both divisions. This general fact is confirmed by the singular relation, on comparing the second and third quarters in Florida, between intermitting and remitting fevers and the class of diseases of the digestive organs, already brought under notice. Whilst, in the second quarter, the ratio of the former is lower than that of the latter, in the third the reverse occurs. Assuming an identity of cause, it would seem that the same morbific agents, in proportion to their degree of intensity of action, may produce either class of lesions.

Before proceeding further in tracing out these relations, it will be necessary to frame a general summary of the mortality arising from specific diseases. In the course of this inquiry, those diseases which have a manifest dependance on season and climate have been more particularly investigated; but the following table, including these results, exhibits a more general view of diseases.

TABLE exhibiting a general view of diseases in the Northern and Southern divisions.

Specific diseases.	Northern division.			Southern division.		
	Total of cases treated.	Total deaths.	Proportion of deaths to the number treated.	Total of cases treated.	Total deaths.	Proportion of deaths to the number treated.
Feb. Intermittens	3,187	1	1 in 3,187	14,094	13	1 in 1,084
" Remittens	587	12	1 in 49	4,196	145	1 in 29
" Synochus	825	2	1 in 412	718	11	1 in 65
" Typhus	54	8	1 in 7	110	24	1 in 5
Catarrh and influenza	9,538	1	1 in 9,538	7,471	4	1 in 1,868
Pneumonia	610	8	1 in 76	900	42	1 in 21
Pleuritis	652	1	1 in 652	1,060	6	1 in 177
Phthisis pulmonalis	152	46	1 in 3 3-10	257	116	1 in 2
Hœmoptysis	83	1	1 in 83	84	2	1 in 42
Dysenteria	5,981	4	1 in 665	13,135	38	1 in 141
Diarrhœa		5			55	
Gastritis and enteritis	289	1	1 in 289	633	26	1 in 24
Cholic and cholera	3,221	2	1 in 1,610	3,282	7	1 in 469
Epidemic cholera	302	103	1 in 3	384	89	1 in 4 3-10
Hepatitis, acut. et chron.	98	3	1 in 33	166	4	1 in 41
Phrenitis and meningitis	18	3	1 in 6	31	5	1 in 6
Apoplexia	6	4	1 in 1 5-10	25	10	1 in 2 5-10
Epilepsia	166	5	1 in 33	188	9	1 in 21
Mania a potu	102	3	1 in 34	306	39	1 in 8
Ebrietas	1,370	5	1 in 274	2,616	58	1 in 45
Nyctalopia	18	–	0 in 18	191	–	0 in 191
Rheumatismus	3,412	–	0 in 3,412	2,845	1	1 in 2,845
Gonorrhœa	971	–	0 in 971	929	–	0 in 929
Syphilis	462	1	1 in 462	584	–	0 in 584
Hydrops.	50	4	1 in 12	206	19	1 in 11
Atrophia and chronic visceral lesions	–	9	–	–	16	–
Casualties	–	35	–	–	50	–
Suddenly	–	3	–	–	7	–
All other diseases	–	11	–	–	28	–
Total	32,154	281	1 in 144	54,411	823	1 in 75

In addition to this mortality, there are reported in the northern division 13 deaths, the causes of which are not specified, making an aggregate 324; and in the southern division 140 deaths of the same class, making an aggregate of 963. The conclusions deduced from this table therefore, merely approximations to the truth; inasmuch as in the er division, the causes of about one-eighth, and in the latter the s of about one-seventh, of the deaths, are not reported. It may fairly inferred, however, that the majority of these last belong to the class of *sudden* or *casualties*.

It is of course impossible in the narrow limits of these observations to do more than direct attention to the most important facts; but to him, disposed to inquire more minutely into these subjects, the necessary materials are here afforded.

On a comparison of the northern and southern divisions in relation to remittent fever, the annual ratio of cases per 1,000 of mean strength, stands as 26 to 168. In the northern division, the contrast in the averages of the three classes is not so great as might, *a priori*, have been inferred, on the supposition of its common origin with intermitting fever, and in view of the comparative exemption of the coast of New England from this form of fever. In the southern division, in which the ratio is more than six times higher than in the northern, the classes present no great extremes. It is worthy of remark that the sixth class, remarkable for a low ratio of intermitting fever, gives the highest averages of remitting fever.

The ratio of mortality from intermitting fever, it is seen, is exceedingly low. It may be said that it is only in our southern latitudes, when violent congestions of internal organs occur, that death takes place in this disease. The mortality from remittent fever, in the northern division, is $\frac{1}{76}$, and in the southern, 6, per 1,000 of the mean strength. In the former the proportion of deaths to the number of cases is 1 in 49, and in the latter 1 in 29. Of the fatal cases of remittent fever, 23 are reported under the name of yellow fever; but some are doubtless registered under the former term. Amongst the troops in Canada, the annual ratio of mortality from remittent fever is one per 3,571 of the strength; whilst in Nova Scotia and New Brunswick, no death arose from this cause in 20 years.

The cases registered as synocha, synochus, common continued, ephemeral, and inflammatory fevers, are included under the head of synochal fever, but the majority of the whole consist of cases reported under the last name. The ratio is higher in the northern than in the southern division, being as 37 to 25; but the average mortality is lower. In the former, the proportion of deaths to the number treated is one in 412, and in the latter, one in 65. In the former, the ratio per 1,000 of strength is 1 in 11,120; and in the latter, 1 in 2,271. In Canada it is 1 in 574, and in Nova Scotia and New Brunswick, 1 in 737. In Nova Scotia and New Brunswick, nearly all fevers are of the common continued type, prevalent in every climate. Whilst in Lower Canada the ratio of intermitting and remitting fever is exceedingly low, in Upper Canada it is comparatively high, being as 13 to 89. Besides, many of

the cases reported in Lower Canada occurred among soldiers who had come from the upper provinces. The same relation has been observed between the coast of New England and the region of the lakes. What seems inexplicable, however, is the fact, as remarked by the British reporter, that whilst they prevail along the shores of the lakes and the margins of the streams in Upper Canada, they are comparatively rare in similar situations in the lower provinces. The troops and inhabitants at Windsor, Annapolis, Fort Cumberland, and Fredericton, possess this exemption, notwithstanding their situation at the embouchure of rivers, and exposure to the influence of that combination of mud and marsh regarded as its prolific source.

Although typhus fever, regarded as a contagious disease, may have little connexion with general atmospheric causes, yet it is placed here to complete the view of febrile affections. It is a disease of comparative infrequency; for, in the northern division only 24, and in the southern 44, cases per 10,000 men have been annually reported. Subject to vague and arbitrary application, the term *typhus* is doubtless often used to designate a *typhoid* state of fever—a supposition favored by the fact that the ratio is higher in the southern than in the northern division. Genuine typhus is generated by that species of miasmata evolved in crowded, ill-ventilated ships, jails, hospitals, and the sordid hovels of the poor; and when once developed, there is every reason to believe that it elaborates a peculiar virus communicable to those coming within the sphere of its activity. In the northern division, 54 cases and 8 deaths, and in the southern, 110 cases and 24 deaths, are reported. Of the latter, 12 fatal cases are reported at Baton Rouge under the name of congestive typhus. In the United States, the annual ratio of deaths from this disease is 1 in 1,476 of the strength; in Canada, it is 1 in 4,944; and in Nova Scotia and New Brunswick, 1 in 6,635.

The average annual mortality from all the fevers brought under notice, per 1,000 of the mean strength, is, among our troops, $4\frac{6}{10}$, and among the British forces serving in Canada, it is $2\frac{8}{10}$—in Nova Scotia and New Brunswick, $1\frac{6}{10}$—and in the West Indies, in the windward and leeward command, 37, and in the Jamaica command, 102. In the last, then, based upon the statistics of 20 years, and embracing an aggregate strength of 51,567, the ratio is 25 times higher than among our forces. It must be borne in mind, however, that one-eighth of the causes of death, in our reports, is not specified.

In respect to cholic and common cholera, the annual ratio of cases, per 1,000 of mean strength, in the northern division, is 145, and in the southern, 131. It is found, however, that in the former division nearly one-half the cases (1,445) are reported at a single post, (West Point,) with a mean aggregate strength of 3,734. It has been already remarked that many of the diseases registered among the cadets are of a very trivial nature. Leaving these data out of the calculation, the ratio of this division is reduced to 96. As the striking contrast between the northern and southern divisions, in regard to intermittent and remittent fever, and diarrhœa and dysentery, does not obtain in relation to cholera and cholic, the inference, that these diseases are not much dependent upon malarious causes, is fairly warranted.

In the northern division, 2 deaths are reported from these affections, and in the southern, 7.

Of epidemic cholera there are 686 cases reported, of which 191 terminated fatally. The history of this epidemic has been given in the details of the posts, as the subject presented itself, but it is believed that some cases and deaths have not been reported, at least in the campaign against Black Hawk, when two medical officers became its victims.

An extraordinary feature of this epidemic is, that the ratio of deaths, to the number of cases treated, varies very little in all the military commands—the statistics of which have been investigated. Thus, the proportion of deaths, to the number of cases, is as under—

United Kingdom, in 1832,–'3,–'4 - - -	32	per centum.
Gibraltar, in 1834 - - - - - -	30	"
Nova Scotia and New Brunswick, in 1834 -	28	"
Canada, in 1832 - - - - - -	36	"
Canada, in 1834 - - - - - -	34	"
Black troops, at Honduras, in 1836 - - -	32	"
United States army, in 1832,–'3,–'4 - - -	28	"

Hence it seems that, under the various modes of treatment adopted, little variation is presented in the results. Among our troops, however, it appears that the disease was considerably more fatal in the northern than in the southern division, the ratio of deaths to cases being in the former 1 to 3, and in the latter 1 to $4\frac{2}{10}$. It may be well to add that all cases reported as *cholerine* have been included under the head of common cholera. The influence of the seasons is apparent from the fact that, in the first quarter 4 deaths, in the second 22, in the third 153, and in the fourth 12, are reported.

From gastritis and enteritis, there are reported in the northern division 1 death, and in the southern 26—the proportion of deaths to the number treated being in the former 1 in 289, and in the latter 1 in 24.

In regard to the relative prevalence of diarrhœa and dysentery, reference has already been made, both in respect to season and climate. These cases have been condensed under one head, but the mortality arising from each is given separately. In the northern division, the proportion of deaths to the number treated is 1 in 665, and in the southern, 1 in 141; and the mortality per 10,000 of the strength is respectively 4 and 37. In the northern division, there is no death reported as arising from dysentery at any posts, except Forts Crawford and Leavenworth. In the West Indies the ratio of deaths from these diseases, per 1,000 of the strength, is, in the windward and leeward command, 19, and in the Jamaica command, 4; thus reversing the relative mortality arising from fevers.

The reputed agency of diet in the production of diseases of the bowels has been confirmed by numerical results in the West Indies. In one command, in which for five days in the week the diet consisted of salt provisions, the mortality from diseases of this class was nine times greater than among the officers; whilst in another, (Jamaica,) in which only two days' salt provisions were issued weekly, the mortality

of the two classes presented very little difference. These are no isolated facts, but uniform results deduced from 20 years' observation. But the elevated temperature of tropical regions, independantly of other causes, seems positively detrimental to health. The absorbents of the intestines being maintained in a state of erethism by the constant evaporation by cutaneous and pulmonary transpiration, a morbid condition is readily assumed under favorable exciting influences. Diarrhœa, dysentery, cholera, hepatitis, and these bilious derangements which accompany fevers, are consequently prevailing affections.

Of acute and chronic hepatitis, the total of cases in the northern division is 98, and in the southern 166, the ratio of the former per 1,000 being $4\frac{4}{10}$, and of the latter $6\frac{8}{10}$. It thus appears that in the southern division the ratio is one-half higher. That these diseases prevail to a greater extent, more especially in our southern latitudes, than is here indicated, is no doubt generally believed. It is found, however, that the ratio of these affections, including icterus, is no more than 18 per 1,000 in the West India commands, whilst the deaths average $1\frac{4}{10}$. It is in the East Indies that hepatitis finds a climate peculiarly favorable to its development. Although the mortality is low in the West Indies, yet it is found, among our troops, to be not more than one-tenth as high. As regards the ratio of deaths to the number of cases, there is little difference in our northern and southern latitudes.

Of apoplexy in the northern division, the total of cases is 4, and in the southern 25, the ratio of the latter being six times as high. As the exciting causes of these cases were chiefly the intemperate use of spirituous liquors, and exposure to the direct rays of the sun, several being reported as *ictus solis*, the higher average in the south might have been readily anticipated. In the southern division, the ratio of deaths to the cases treated is nearly twice as high as in the northern. As regards phrenitis and meningitis, it is found that the relative results, on a comparison of the north and south, are very like those of the preceding disease.

The dreadful effects induced by inebriation have been shown in the details of each post. It has been attempted, as is seen in the table of each post, to condense certain cases under the head of "ebriety;" but as some medical officers reported no such cases, except under the general head of "all other diseases," the result, as regards the number of cases, falls short of the reality. Its agency, directly and indirectly, in the causation of phthisis pulmonalis and epidemic cholera, has been abundantly pointed out; and its intimate connexion with febrile diseases, diarrhœa and dysentery, and hepatitis, although not definitely determined, is so apparent that it is constantly dwelt upon in the reports of medical officers. Its relation with apoplexy has just been brought under notice; and now the subject of "ebrietas" comes under consideration.

In the northern division, the total of cases reported as ebriety is 1,370, and the deaths, 5, being one in 274; and in the southern, the total of cases is 2,616, and the deaths 58, being 1 in 45. Assuming that inebriation prevails to an equal extent in the two divisions, it appears that in

northern latitudes it is attended with comparative immunity, as regards its immediate effects; for the deaths from this cause average in the northern division 2, and in the southern 23, annually, per 10,000 of the strength. But this subject admits of further elucidation.

Of delirium tremens there are reported, in the northern division, 102 cases and 3 deaths, being 1 in 34; and in the southern, 306 cases and 39 deaths, being 1 in 8. The annual mortality per 10,000 is, therefore, in the north upwards of one, and in the south 16.

The total of epileptic cases, which generally arise from the excessive use of ardent spirits, is, in the northern division, 166 and in the southern 188, the annual ratio of each being $7\frac{5}{10}$ per 1,000; but in this affection, too, the mortality is higher in southern latitudes, being in the former division 1 in 33, and in the latter 1 in 21 cases.

These are not, however, the only deaths arising from drunkenness. Of the 10 deaths reported as *sudden*, the majority is doubtless attributable to this cause. Of the 25 deaths from various chronic visceral lesions, the greater proportion has no doubt been induced by the same agent. The 85 deaths under the head of casualties have been reported principally as drowned, frozen, suicide, homicide, wounds, and injuries—the result, in a great measure, of intemperance. The aggregate of deaths in the table furnishing these data is 1,104, more than one-half of which are traced to that war against nature, which claims more victims than the most fatal epidemics—epidemics, the visitations of which are viewed with dreadful apprehensions, whilst this moral pestilence is continuously in our midst, almost unnoticed.

An important step in suppressing habits of inebriety among our troops has been effected by the abolition of the issue of spirits as a part of the daily ration of the soldier. When a man was obliged to swallow or throw away his ration of spirits, it was not to be expected that the best directed efforts of commanding officers could effect any thing towards suppressing the evil; and to convert temperate men into drunkards, it were difficult to invent a more successful plan. "To swallow nearly half a pint of spirits daily was," says Henry Marshall, Deputy Inspector General of Hospitals in the British army, "until the abolition of spirit-rations, a part of the *duty* of a soldier; and that this duty might be effectually executed, it was the usage of the service in many stations to have it performed under the immediate superintendence of a commissioned officer, who certified to his commanding officer that he had actually seen each man drink his *drams*."

Of dropsies, there are reported in the northern division 50 cases and 4 deaths, and in the southern 206 cases and 19 deaths; the ratio of mortality to the cases treated being the same. In the former, the annual average of cases per 1,000 is 2, and in the latter 8. As these effusions result mostly as the sequelæ of febrile affections, the difference in the two divisions may be ascribed to the relative agency of malarious causes; and no doubt, in some measure, to the more deleterious effects induced by ebriety in southern climates.

Of gonorrhœa there are 1,900 cases reported, and no death. This disease prevails to an equal extent in both divisions. Of syphilis there

are 1,046 cases, one of which terminated fatally, being complicated with chronic diarrhœa. Of nyctalopia or hœmeralopia, there are reported in the northern division 18 cases, and in the southern 191. With the exception of our most northern and southern posts, this affection is almost unknown in the United States. As these statistics, however, include but one year of the data furnished by the troops serving in Florida, the prevalence of the disease is not fully apparent.

Of rheumatic affections the annual ratio of cases per 1,000 is, in the northern division 15, and in the southern 11. In 6,257 cases, but one death is reported. This subject, as well as the class of pulmonary diseases, has, however, been already fully investigated. In the results of the latter, Forts Independence and Monroe are here included.

In determining the general results in reference to the diseases just detailed, the deaths given under the last four heads of the table are not taken into the calculation; the total of the northern division being 223, and of the southern 722. It is found that in the latter division the ratio of cases is 50 per cent. higher than in the former; that the proportion of deaths to the number treated is nearly twice as high, (1 in 75, and 1 in 144,) and that the average mortality compared with the mean strength is as three to one.

The total of monthly deaths in each division, according to the post returns, is exhibited in the annexed table—

TABLE exhibiting the total of monthly deaths in each division.

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Northern division -	22	27	26	26	32	28	55	41	39	25	37	40	398
Southern division -	77	76	74	61	84	105	117	144	160	139	115	82	1,234

This abstract shows not only the relative influence of the different months and seasons in the production of fatal diseases, but the comparative mortality of each division, the northern having an aggregate mean strength of 22,242, and the southern of 24,979. On a mean of 10 years, from 1829 to 1838 inclusive, the annual mortality, according to the post returns of the Adjutant General's office, is, in the northern division $1\frac{8}{10}$ per cent., and in the southern $4\frac{9}{10}$, whilst the average of the two divisions is $3\frac{5}{10}$ per cent. It is thus seen that the mean mortality of the posts is less than that by the regimental returns, the latter being $4\frac{4}{10}$ per cent.

The mortality of British troops on the western coast of Africa shows that region to be decidedly hostile to European life. The most striking climatic features are extreme heat and moisture. "Upwards of 300 inches of rain," says Major Tulloch, "have frequently fallen during the

wet season; and more has been measured in two nights than falls in Great Britain during a year." The principal military stations are, Gambia, Sierra Leone, and the Isles de Loss. Of 1,685 white troops which arrived on this coast in 1822,-'3,-'4,-'5, there died from 1823 to 1827 inclusive, 1,298, and 387 were invalided. Of the latter, 17 died on their passage home, and only 33 of the remainder were, on inspection, found fit for further service. Of officers, 209 per 1,000 died annually, and 197 per 1,000 returned home invalided. On the average of healthy and unhealthy years, upwards of a fifth have died, and nearly an equal proportion have been invalided annually. So fatal is the influence of this climate on European constitutions, that two-fifths of the white troops are annually cut off by fevers, whilst the blacks are almost exempt. The natives, however, are subject to many diseases from which Europeans are exempt, more especially small pox. Among the black troops, on an average of 19 years, the mortality was only 3 per cent.

The mortality of British troops in the Australian Colonies, on an average of 20 years, is only 14 per 1,000.

Having completed the investigation of each class of posts in reference to pulmonary diseases, the subject may now be considered in its general relations. The etiology of *catarrhal affections* has been beautifully illustrated in each system of climate. In the northern division of the United States, consisting of three regions, two uniform and one excessive, the annual ratios of the two former are 233 and 300, whilst that of the other is 552. In the middle division, the modified climate of the sea coast presents an annual ratio of 271, whilst that of the interior posts,—a region lying somewhat farther south,—is 290. In the southern division, as the posts of the first class are mostly on the Lower Mississippi, the annual average is 218; and in the other class, comprising the mild, insular climate of East Florida, the ratio is only 143.

It would seem, then, that sudden atmospheric vicissitudes combined with moisture do not excite a strong susceptibility to catarrhal diseases, else the sea coast and the lakes should give a higher ratio than the dry and cold atmosphere of the opposite localities. The results, on every hand, afford satisfactory proof that the ratios of these lesions are highest when the seasons are well marked, producing a decided impression on the animal economy, and that they are less dependent upon daily variations of temperature than upon its extreme range, as connected with the seasons.

To these laws no exceptions have been presented. The rule holds good, that wherever the seasons are violently contrasted the ratio of catarrh and influenza is highest, decreasing in proportion as the difference in the mean temperature of summer and winter grows less. As the mean winter temperature of the region of the lakes is three degrees higher, and that of summer is ten degrees lower, than the class of posts in the same latitude removed from the agency of large bodies of water, so the annual average of catarrhal diseases is found to be little more than half as high in the former as in the latter.

As the middle division is subject to the extremes of northern and southern latitudes, so it is found prolific in pulmonic lesions in general. The first class of posts, situated on the sea-coast and inlets between the Delaware and Savannah, gives an average of catarrh and influenza higher than that of the New England coast, where a low temperature prevails, as well as that of more southern latitudes, in which a high temperature predominates. Compared with the second class of this division, of which Jefferson Barracks is the most northern, and Fort Jesup the most southern, post, the usual relation between mild and excessive climates is observed. Although the southwestern posts, considered in the aggregate, lie farther south than the other class, yet the annual ratio is as 290 to 271.

In the southern division, the ratio of catarrhal diseases is found the lowest. The second class of posts, situated in East Florida, a region possessing all the advantages of the most favored insular climate, presents an annual ratio of only 143; whilst the first class, in consequence of the modified atmosphere of the Lower Mississippi, holds an intermediate relation, (the average being 218,) in respect to the climate of East Florida and that of the southwestern posts.

Having thus determined the law of climate, in regard to the annual average of catarrhal lesions, the quarterly ratios, as illustrative of the influence of the seasons, will next engage attention. Compared with the relative agency of the seasons, in the causation of intermittent fever, it is found that catarrhal diseases acknowledge this influence in a more eminent degree. This subject has been fully illustrated in the remarks appended to each class of posts. It has been seen that the ratios of the first and fourth quarters, in obedience to a general law, are always the highest, and the third invariably the lowest. The peninsula of Florida, which affords no marked distinction of seasons, exhibits an apparent exception to this rule, the third quarter having a higher ratio than the second or fourth; but this evidently arises from the circumstance, that amongst the causes which determine the prevalence of catarrhal lesions, those that are secondary in other systems of climate, become in this the primary ones. The general law developed in regard to the comparative influence of the seasons in reference to catarrh and influenza, is further confirmed by the totals given in each quarter by the seven systems of climate investigated. These stand as follows—

1st quarter.	2d quarter.	3d quarter.	4th quarter.
689	395	294	618

To a person laboring under *chronic bronchitis*, the advantage of a winter residence in a more southern latitude thus becomes at once apparent. If he can avoid the transition of the seasons—that meteorological condition of the atmosphere which maintains the first place among the causes which induce catarrhal lesions—he will do much towards controlling his malady. Let us suppose him on the coast of New England in the third quarter, the ratio being as low as 36, when the sudden transition of the season brings it up to 85. The consequences will inevitably be an aggravation of that disorder to which he

is predisposed; for the respiratory organs, even when healthy, are peculiarly susceptible, at this season, to abnormal action. Let us, on the contrary, suppose him gradually moving south with the change of the season, and the fourth quarter will find him in a climate whose ratio is even lower than that of the preceding quarter in the region which he had left. On the coast of New England, the ratio of the third quarter is 36, and that of the 4th is 85, whereas the average of the latter quarter in peninsula Florida is only 33. These are not isolated facts, but uniform results obtained from ten years' observation.

The assemblage of morbid phenomena, usually designated by the term *consumption*, or *phthisis pulmonalis*, it is well known, may arise from various pathological conditions of the respiratory organs; but, as regards the advantages of change of climate, reference has been made only to *chronic bronchitis*, although, reasoning from analogy, the inference might be warranted, that similar effects would follow in other forms of consumption. As it is, however, the catarrhal or pituitous consumption of authors that probably constitutes the majority of the reputed cases of phthisis pulmonalis in northern latitudes, and as this is the only form that can be really considered remediable, the importance of determining the comparative influence of season and climate in relation to catarrhal lesions becomes more strikingly manifest.

The subject of *pleuritis* and *pneumonia* will next engage attention. As these lesions, so far as climate is concerned, are probably owing to the same causes, the results will be investigated conjointly. It has been seen that the laws in regard to pleuritis and pneumonia, as expressed by the numerical results, differ in some respects from those peculiar to catarrhal diseases. In the northern division, the modifying agency of the ocean and the lakes is not manifested in the results; but in all the other systems of climate, the laws of pleuritis and pneumonia are analogous to those of catarrhal affections. On the coast of New England, the annual ratio of cases of pleuritis and pneumonia, per 1,000 of the mean strength, is 41, on the lakes 49, and in the third class of this division, characterized by extremes of temperature, it is only 45. In the middle division, the difference between the two classes is very striking, the annual ratio of the first being 57, and of the second class 92.

In regard to the influence of the seasons, also, the law compared with that of catarrh and influenza will show some variation. In the three classes of the northern division, notwithstanding the third quarter is the lowest, the agency of the seasons is not very obvious. In all the others the difference is very striking; and the same result is exhibited by the totals given in each quarter by all the classes of posts. These averages, which give a fair expression of the relative influence of the seasons in the production of pleuritis and pneumonia throughout the United States, stand thus—

1st quarter.	2d quarter.	3d quarter.	4th quarter.
138	84	58	86

Contrary to general opinion, it is found that the average of pleuritis and pneumonia is lower in the cold and variable climate of our northern

and eastern States than in the middle and southwestern regions of the United States. In catarrhal lesions, the same law obtains so far as the coast of New England is concerned. In pleuritis and pneumonia, the law in respect to contrasted seasons, as connected with catarrhal diseases, receives some modification. In the northern division, for example, the class of posts remote from large bodies of water has a ratio only half as high as that of the southwestern stations. It would seem to be a law, that in proportion as the high temperature of summer makes a decided impression on the system, do the lungs become susceptible to the morbific agency of the opposite season. At Fort Snelling, the difference in the mean temperature of winter and summer is nearly 19° greater than at Fort Gibson; but at the former the summers, notwithstanding the mercury rises very high, are short, whilst at the latter, the summer heats are both very great and long continued. In the northern States, as the animal economy is little impressed by the short summer, the annual ratio of pleuritis and pneumonia is not only low, but there is little difference in the ratio of the seasons; but at the southwestern posts, remarkable for high and long continued summer heats, the annual ratio is about twice as high as in the northern States, whilst the difference in the seasons is very considerable, the ratio of the third quarter being less than one-ninth of the annual average. This contrast is rendered still more striking by the fact, that whilst the ratios of the summer at our northern and southwestern posts are the same, the latter in the first quarter is nearly four times as high. At Fort Gibson, a point at which the mercury rises higher than at any other post, the averages stand thus—

1st quarter.	2d quarter.	3d quarter.	4th quarter.	Annual ratio.
71	19	9	15	112

On comparing the two classes of posts constituting the middle division, the general law in reference to the modifying influence of the ocean is very decidedly expressed. In the southern division, as the seasons grow less contrasted, the annual ratio decreases rapidly. In the second class, in which, for example, at Fort Brooke and at Key West, the difference in the mean temperature of winter and summer is respectively only 16° 02′ and 11° 34′, the lowest average is presented. In determining the laws of climate in reference to pleuritis and pneumonia, it seems necessary to consider not only the degree of contrast in the seasons, but the duration of high temperature.

In reference to *phthisis pulmonalis*, it would appear that the numerical results do not warrant any principles of general application. In the northern division, the third class, contrary to the general average of the class of diseases of the respiratory organs, gives the lowest ratio; but this difference, as nearly all the fatal cases of consumption are ascribed to the abuse of ardent spirits, is more apparent than real; for if the results of West Point, a command consisting mainly of officers and cadets, are excluded, the ratio of this class rises about 40 per cent. That the ratio of chronic bronchitis is obedient to the same laws which control catarrhal lesions, is very probable; but in regard to phthisis

pulmonalis in general these laws are not recognised. It is an important fact, that whilst the averages of catarrh and influenza, pleuritis, and pneumonia, in the first class of the middle division, are reduced nearly 50 per cent. by excluding the statistics of Fort Monroe, that of phthisis pulmonalis is increased. It confirms the opinion that this disease, although much under the influence of season and climate, is still more, especially among troops, under the control of other agents.

In regard to the specific diseases composing this class, tabular abstracts have been exhibited, showing the annual average of cases and the mortality in each in every system of climate. The simple distinction of northern and southern regions of the United States has been made, the former comprising the three classes of posts embraced in the northern division, and the latter the four constituting the middle and southern divisions. It appears that, with the exception of catarrhal diseases, the ratio of pulmonary lesions is higher in the southern than in the northern regions. It is in the middle districts of the United States, however, that pleuritis, pneumonia, and phthisis pulmonalis, are most prevalent—the peninsula of Florida having the lowest average. In respect to the mortality, it is found, too, that the same law obtains, the deaths per 1,000 of mean strength being as under—

	Phthisis pulmonalis.	Pneumonia, pleuritis, and catarrh.
Northern region - -	$2\frac{1}{10}$	- - $0\frac{5}{10}$
Southern " - -	$4\frac{4}{10}$	- - - $1\frac{8}{10}$

The high mortality of our southern region is caused by the middle division of the United States, the average on our southern coast being comparatively low. Taking the statistics of the posts in East Florida and those on the Lower Mississippi alone, the ratio of phthisis pulmonalis is found to be only $1\frac{7}{10}$, and that of the remaining diseases of this class to be no more than $\frac{7}{10}$, per 1,000 of the mean strength. It is also ascertained that these diseases are of a more fatal tendency in the southern than in the northern region. In the latter, the average mortality from phthisis pulmonalis is 32, and in the former 42, per 100 cases; and as regards pleuritis and pneumonia, the difference is much greater, the ratio of mortality in the northern region being 9, and in the southern 26, per 1,000 cases. It is necessary to add, however, that this high mortality is limited to the southwestern stations, 33 deaths (out of 40, the total of the southern region) being reported in this class.

It is thus seen that, as regards pleuritis, pneumonia, and phthisis pulmonalis, the ratio of cases and deaths is greater in our middle region, including the southwestern stations, than at either extreme. In endeavoring to explain this result, much may, perhaps, be justly ascribed to the circumstance that the subjects are generally from our northern States or from Europe. As all causes by which the energies of the human frame are sapped conduce to the development of the tubercular form of consumption, so it may be safely asserted that the majority of cases of this disease at our southern posts, supervene upon febrile diseases, more especially in constitutions broken down by intemperance, bearing the

same relation to fevers as those other sequelæ—dropsy, jaundice, and the various chronic lesions of the viscera. In our reports from the southern and the southwestern stations, it is very usual to find death ascribed to phthisis pulmonalis supervening, more especially in cases of intemperate habits, on intermittent and remittent fever, dysentery, or other affections, which gradually exhaust the vital energies. On the the Lower Mississippi—a class of posts which presents the highest mortality—the average of phthisis pulmonalis is low, owing very probably to the circumstance that fevers are of the most fatal tendency, terminating either in speedy death or rapid recovery. At the southwestern stations, or those along our middle coast, the malarial poison acts more slowly, thus developing, by a gradual deterioration of the constitution, a tubercular form of consumption. It follows, then, that a continuous residence in the south, so far from being beneficial in this disease, will often hasten its fatal issue. This fact does not, however, in the least militate against the doctrine which maintains that advantage will be derived from change of climate in the way of a winter residence; and so far as regards the propriety of the measure in *chronic bronchitis*, when it is known that pulmonary diseases as a class are more under the influence of the seasons than intermitting fever, no reasonable doubt can be entertained.

In regard to *rheumatic affections* in general, few remarks are demanded. This disease, which is generally ascribed to sudden variations of temperature, conjoined with excess of moisture, is found to be less under the influence of atmospheric agency than is usually supposed. That these affections are controlled in some measure by the same laws which govern pulmonary diseases is, however, apparent. Were cold, moisture, and sudden alternations of temperature, powerful exciting causes, the highest ratio should be given on the coast of New England and the northern chain of lakes; on the contrary it is found that, like pulmonic lesions, the disease is most rife in the dry and cold atmosphere of the interior, characterized by an extreme range of the thermometer, and a striking contrast of the seasons. On the New England coast, the annual ratio of cases per 1,000 men is 110, in the region of the lakes 151, and in the opposite climate of this division 166. In the middle division this law is reversed, the averages of the two classes being 126 and 112; but if the results given by Fort Monroe, as in pulmonary diseases, are excluded, the annual ratio of the former is reduced to 93. The ratios of the seasons present no striking contrasts. The first and second quarters give the highest ratios; but, contrary to the law which governs pulmonary diseases, the averages of the third and fourth are the same. The totals given in each quarter, by the statistics of the whole United States, are as under—

1st quarter.	2d quarter.	3d quarter.	4th quarter.
249	219	201	202

Among 6,257 cases of rheumatic disease reported, only one death occurred.

The following abstract is taken from the report upon the medical statistics of the British troops—

	Jamaica.	Nova Scotia & New Brunswick.	Bermudas.	Malta.	Ionian Islands.	Gibraltar.	Canada.	Mauritius.	Windward and leeward commands.	United Kingdom.	Cape of Good Hope.
Admissions from rheumatic affections annually per 1,000 of mean strength - - - -	29	30	33	34	34½	38	40	46	49	50	57

The reporter directs attention to the fact that rheumatic diseases are less prevalent in the Mediterranean than in Canada and Nova Scotia, and that "though some of the provinces of the Cape of Good Hope have occasionally been without rain for several years, these diseases are more frequent in the dry climate of that command than in the West Indies, where the condition of the atmosphere is as remarkably the reverse: yet have extreme cold and atmospheric vicissitudes, coupled with excess of moisture, been assigned as satisfactory causes for their prevalence." In the northern division of the United States, it has been seen that rheumatic diseases, like those of the lungs, obey in some measure the inflexions of the isotheral and isocheimal lines.

[NOTE.—The latitudes and longitudes given in this book are generally taken from Tanner's Map of the United States.]

ERRATA.

Page 29, continue the quotation from the word "*command*" down to the word "*blast.*"

Page 68, third line from bottom, for "6 *feet*" read "18 *feet.*"

Page 264, twentieth line from the top, insert commma (,) between the words "*simply*" and "*with.*"

ERRATA.

Since this work has been bound up the following additional errata have been discovered.

Page 4, line 9 from top, for "*has*" read "*have.*"
" 5, " 5 from top, for "*considerarion*" read "*consideration.*"
" 11, " 25 from top, erase the word "*min,*" occurring twice.
" 16, " 24 from top, erase the word "*min.*"
" 16, " 39 from top, for "*reviewed*" read "*viewed.*"
" 17, " 24 from top, after "*every*" insert "*other.*"
" 25, " 37 from top, for "*may*" read "*nay.*"
" 42, " 4 from top, for "*comæ*" read "*coma.*"
" 98, " 4 from bottom, for "*shew*" read "*shews.*"
" 125, " 9 from top, for "*asphixia*" read "*asphyxia.*"
" 150, " 15 from top, for "*philogistic*" read "*phlogistic.*"
" 163, " 18 from top, for "*strata*" read "*stratum.*"
" 167, 2d & 3d lines from the top, for "*cal. gr.* 21, *jalap* 10," read "*cal. gr.* 10, *jalap* 21."
" 225, line 18 from top, insert a *comma* (,) for the *period* (.) after the word "*details.*"
" 236, " 18 from top, for "*ademalodes*" read "*ædematodes.*"
" 270, " 1, for "*petite*" at end of line, read "*petites.*"
" 271, " 21 from top, for "*frebile*" read "*febrile.*"
" 274, " 30 from top, for "*Dr. Ball*" read "*Dr. Bell.*"
" 282, " 10 from top, erase the word "*and.*"
" 291, " 24 from bottom, for "*west*" read "*east,*" and "*east,*" "*west.*"
" 299, " 13 from top, for "*quarter*" read "*quartan.*"
" 322, " 9 from bottom, for "*legislation,*" read "*legislators.*"

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